



FCC TEST REPORT

FCC ID:2A6GBAOKC10S

Product	:	mini pc
Model Name	:	KC10
Brand	:	N/A
Report No.	:	PTC22021806201E-FC03
Prepared for		
aopoo technology co.,ltd		
Room 706, Bens Tower, Ganli 6 road, longhua district,Shenzhen city		
Prepared by		
Precise Testing & Certification Co., Ltd		
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China		



1 TEST RESULT CERTIFICATION

Applicant's name : aopoo technology co.,ltd.

Address : Room 706, Bens Tower, Ganli 6 road, longhua district,Shenzhen city.

Manufacture's name : aopoo technology co.,ltd.

Address : Room 706, Bens Tower, Ganli 6 road, longhua district,Shenzhen city.

Product name : mini pc

Model name : KC10

Standards : FCC CFR47 Part 15 Section 15.407

Test procedure : ANSI C63.10:2013

Test Date : Apr. 08, 2022 to Apr. 16, 2022

Date of Issue : Apr. 16, 2022

Test Result : Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink that reads "Simon Pu".

Simon Pu / Engineer

Technical Manager:

A handwritten signature in black ink that reads "Ronnie Liu".

Ronnie Liu / Manager



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2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	15.207	PASS
Radiated Spurious Emissions	15.205(a) 15.209 15.407(b)	PASS
Emission and Occupied Bandwidth	15.407(a)(e)	PASS
Maximum Output Power	15.407(a)(1) (3)	PASS
Power Spectral Density	15.407(a)	PASS
Frequency Stability	15.407(g)	PASS*
Antenna Requirement	15.203	PASS
Remark *: For Frequency Stability: The Applicant ensuring the EUT meets Section 15.407(g) requirements		



3 General Information

3.1 General Description of E.U.T.

Product Name	:	mini pc
Model Name	:	KC10
Additional model	:	KC10F,AC1-DP,AC1-Z,TK10,TK11,G1,WS10,WS10F Note:The appearance of the product is different.
Specification	:	802.11b/g/n HT20 BT 4.0 BLE 802.11a//n HT20/HT40/ac20/ac40
Operation Frequency	:	2.4G Wifi :2412-2462MHz 5G Wifi:5150-5250 MHz 5.8G Wifi:5725MHz~5850MHz
Number of Channel	:	11 channels for 802.11b/g; n(HT20) 7 channels for 802.11n(HT40) 4 channels for 802.11a/n20/ac20 5150-5250 MHz 5 channels for 802.11a/n20/ac20 5725MHz~5850MHz 2 channels for 802.11n40/ac40 5150-5250 MHz 2 channels for 802.11n40/ac40 5725MHz~5850MHz 40 channels for BLE
Type of Modulation	:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n/a/ac; GFSK For BT
Antenna installation	:	FPC antenna A FPC antenna B Note1: For Bluetooth just only Used antenna B) Note2:Single transmission, not simultaneous transmission
Antenna Gain	:	3 dBi
Power supply	:	Adapter model:ADP-65JH-DB Input: AC100-240V 50/60HZ 1.5A, Output:DC 19V 3.42A
Hardware Version	:	N/A
Software Version	:	N/A



3.2 Channel List

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11a: 6 Mbps; 802.11n (HT20): MCS0; 802.11ac: MCS0) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 a/N20/N40/AC20/AC40

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	46	5230	153	5765
38	5190	48	5240	157	5785
40	5200	149	5745	159	5795
44	5220	151	5755	161	5805
				165	5825

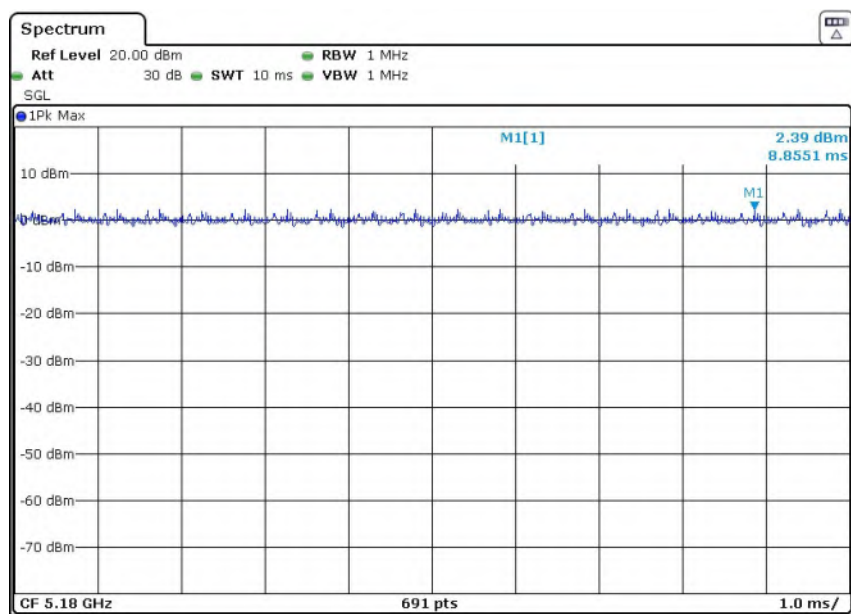


The maximum duty cycle as following table:

Test Mode	Duty Cycle(%)
802.11a	100%

Test Plots:

802.11a





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3.3 Test Site

Precise Testing & Certification Co., Ltd

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A



4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-30GHz	Aug. 21, 2022
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug. 21, 2022
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug. 21, 2022
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug. 21, 2022
Signal Analyzer 40GHz	Rohde&Schwarz	FSV40	101456	10Hz-40GHz	Aug. 21, 2022

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug. 21, 2022
Loop Antenna	Schwarzbeck	FMZB 1519	012	9 KHz -30MHz	Aug. 21, 2022
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Aug. 21, 2022
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	1MHz-1GHz	Aug. 21, 2022
Cable	Schwarzbeck	PLF-100	549489	9KHz-3GHz	Aug. 21, 2022
Spectrum Analyzer	Agilent	E4407B	MY45109572	9KHz-40GHz	Aug. 21, 2022
Horn Antenna	SCHWARZBECK	9120D	9120D-1246	1GHz-18GHz	Aug. 21, 2022
Power Amplifier	LUNAR EM	LNA1G18-40	J10100000081	1GHz-26.5GHz	Aug. 21, 2022
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-181	14GHz-40GHz	Aug. 21, 2022
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Aug. 21, 2022



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Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Aug. 21, 2022
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug. 21, 2022

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug. 21, 2022
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Aug. 21, 2022
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Aug. 21, 2022



4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	$\pm 1.0\text{dB}$
Power Spectral Density, conducted	$\pm 2.2\text{dB}$
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
Time	$\pm 2\%$
Duty Cycle	$\pm 2\%$
Temperature	$\pm 1^\circ\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~25GHz)	$\pm 4.74\text{dB}$



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4.3 Description of Support Units

Equipment	Model No.	Series No.
Adapter	ADP-65JH-DB	N/A

5 Conducted Emission

Test Requirement:	: FCC CFR 47 Part 15 Section 15.207
Test Method	: ANSI C63.10: 2013
Test Result	: PASS
Frequency Range	: 150kHz to 30MHz
Class/Severity	: Class B

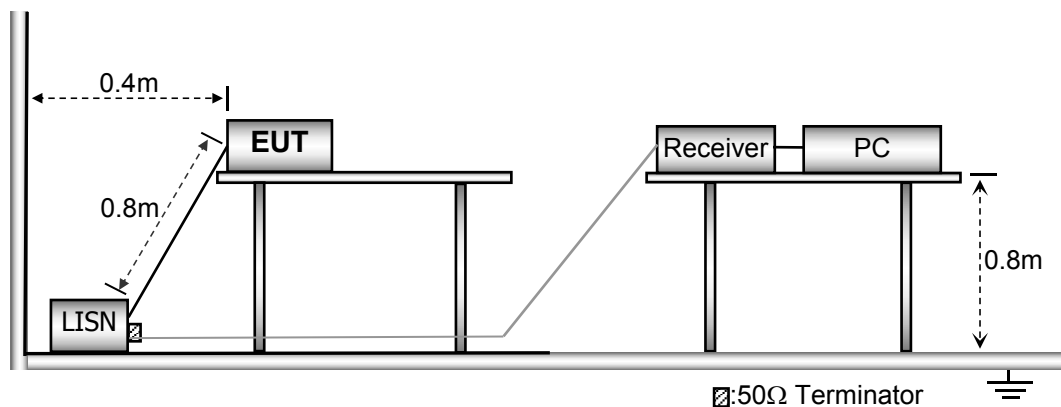
5.1 E.U.T. Operation

Operating Environment :

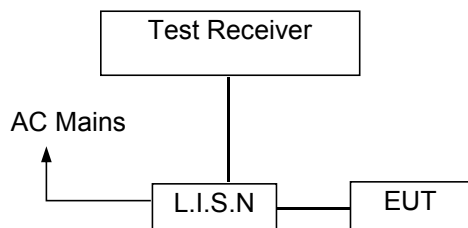
Temperature	: 23.9 °C
Humidity	: 51.4 % RH
Atmospheric Pressure	: 101.21kPa

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



5.3 Test SET-UP (Block Diagram of Configuration)



5.4 Measurement Procedure

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.6 Measurement Description

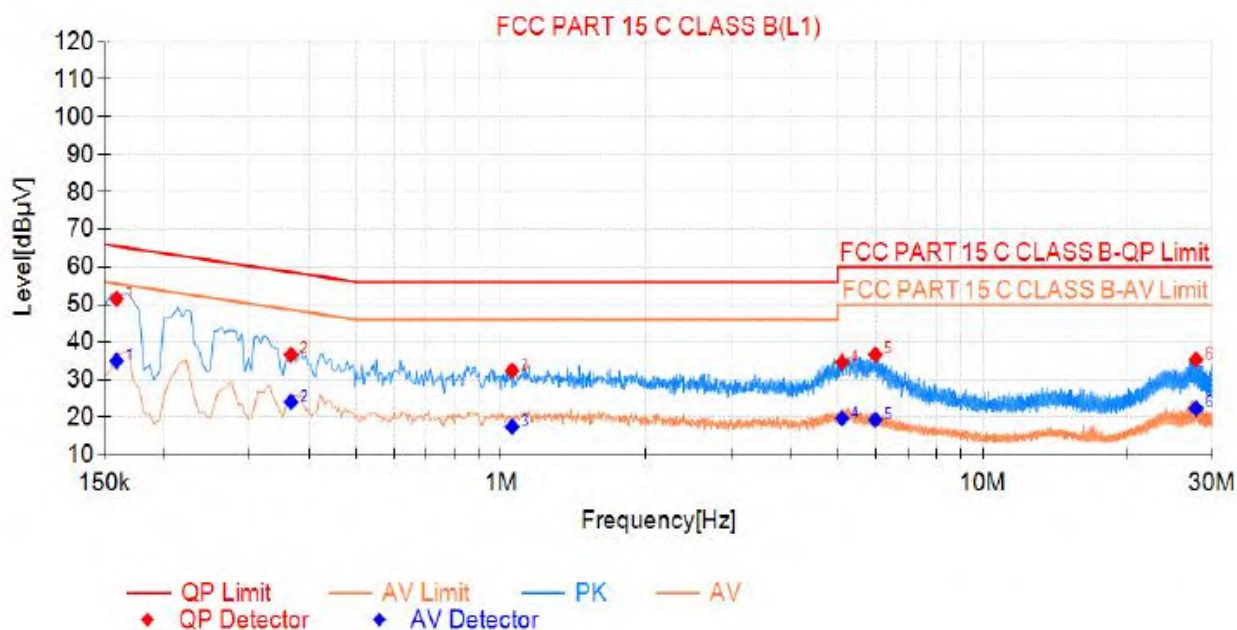
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.7 Conducted Emission Test Result

Pass.

120V/240V All the modulation modes were tested the data of the worst mode (AC 120V/60Hz, TX 5180MHz) are recorded in the following pages and the others modulation methods do not exceed the limits.

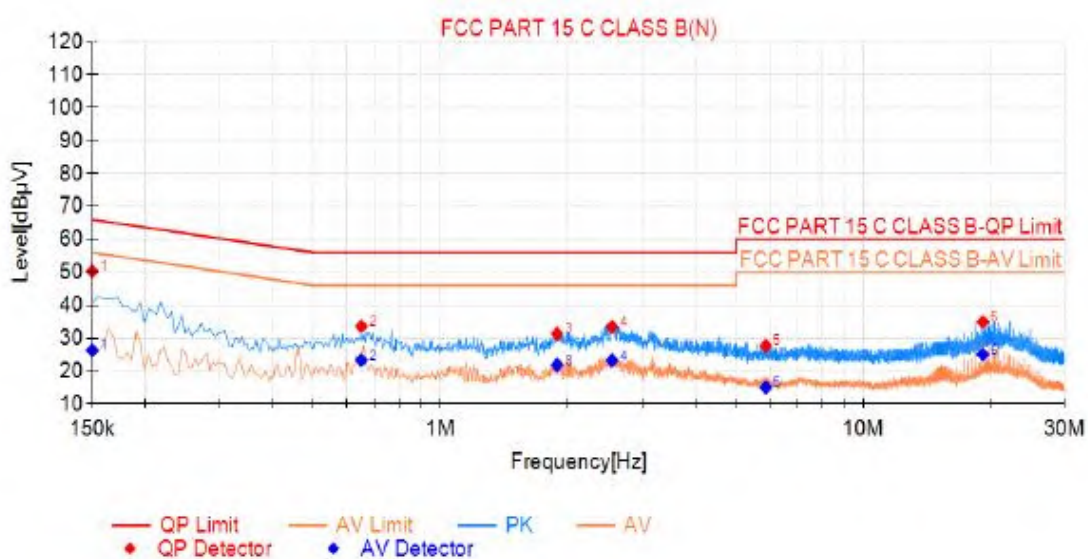
Line-AC 120V/60Hz



Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.159	51.52	65.52	14.00	34.97	55.52	20.55	PASS
2	0.366	36.62	58.59	21.97	24.03	48.59	24.56	PASS
3	1.0545	32.38	56.00	23.62	17.45	46.00	28.55	PASS
4	5.1045	34.61	60.00	25.39	19.68	50.00	30.32	PASS
5	5.9865	36.67	60.00	23.33	19.32	50.00	30.68	PASS
6	27.7485	35.31	60.00	24.69	22.34	50.00	27.66	PASS

Neutral-AC 120V/60Hz



Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.150	50.28	66.00	15.72	26.27	56.00	29.73	PASS
2	0.650	33.57	56.00	22.43	23.30	46.00	22.70	PASS
3	1.887	31.28	56.00	24.72	21.79	46.00	24.21	PASS
4	2.544	33.39	56.00	22.61	23.21	46.00	22.79	PASS
5	5.879	27.66	60.00	32.34	15.02	50.00	34.98	PASS
6	19.167	34.89	60.00	25.11	25.03	50.00	24.97	PASS



6 Radiated Spurious Emissions

Test Requirement	:	FCC CFR47 Part 15 Section 15.209 & 15.407(b)
Test Method	:	ANSI C63.10:2013
Test Result	:	PASS
Measurement Distance	:	3m
Limit		

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

Further.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits. As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz



As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

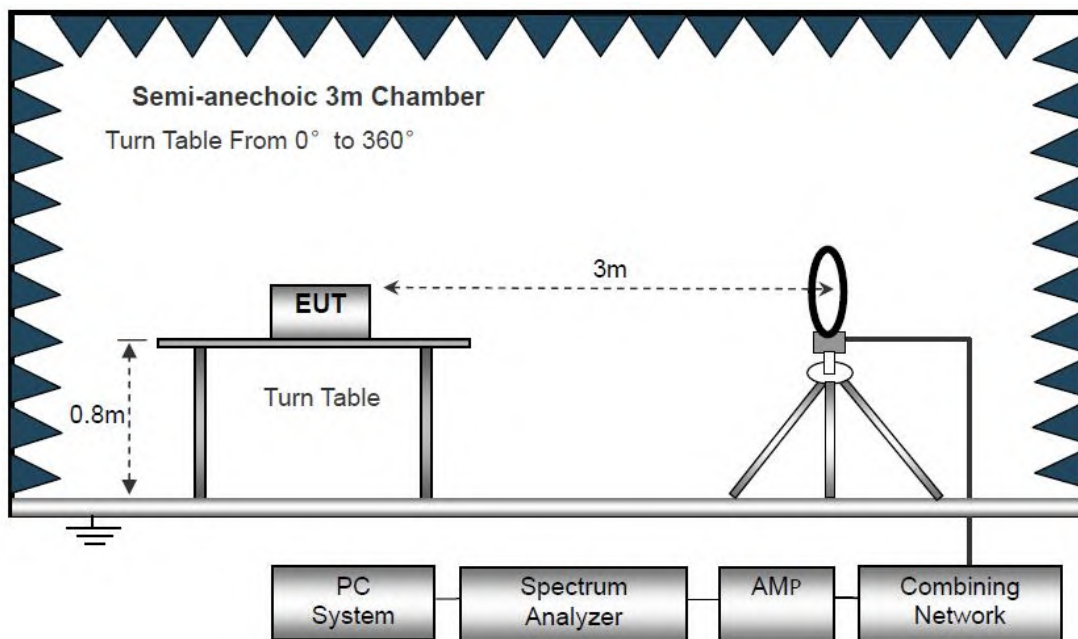
Operating Environment :

Temperature:	:	24.5 °C
Humidity:	:	52 % RH
Atmospheric Pressure:	:	101.3kPa
Test Voltage	:	AC 120V 60Hz

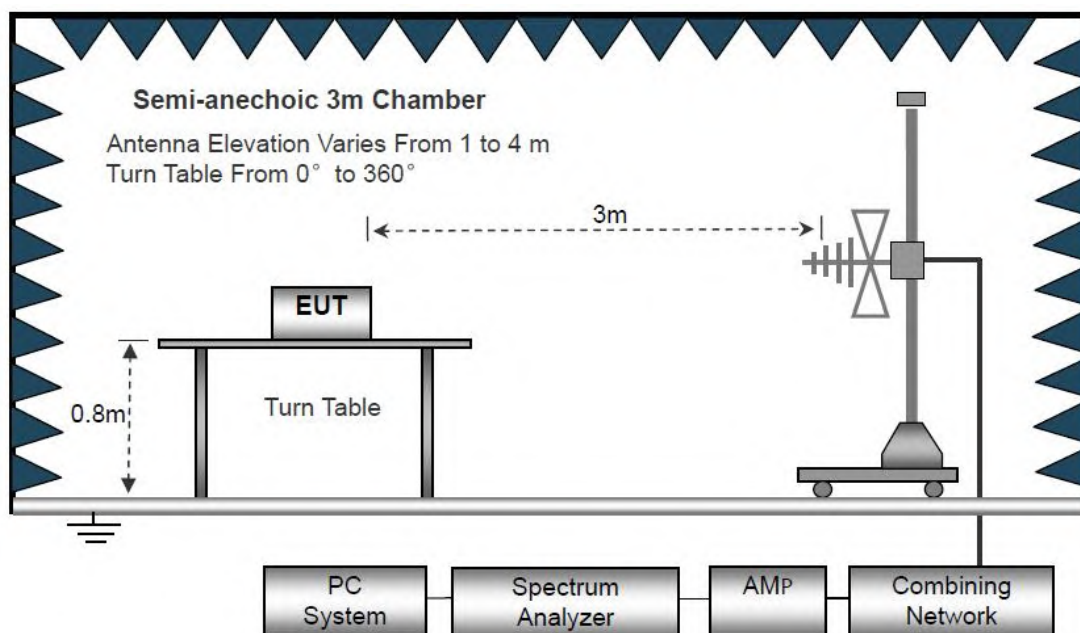
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

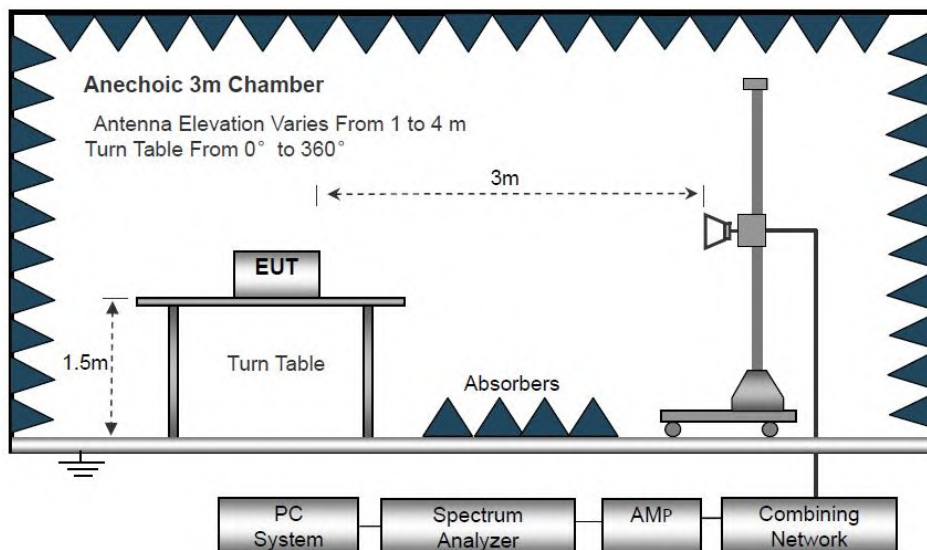
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



6.3 Spectrum Analyzer Setup

	Frequency	Detector	RBW	VBW	Remark
Receiver Setup	Below 30MHz	--	10kHz	10kHz	--
	30MHz ~ 1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value



6.4 Test Procedure

1. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane, And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room



6.5 Summary of Test Results

Test Frequency: 9KHz-30MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	>20

Note:

The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40\log(\text{Specific distance} / \text{test distance})$ (dB);

Limit line = Specific limits (dBuV) + distance extrapolation factor.

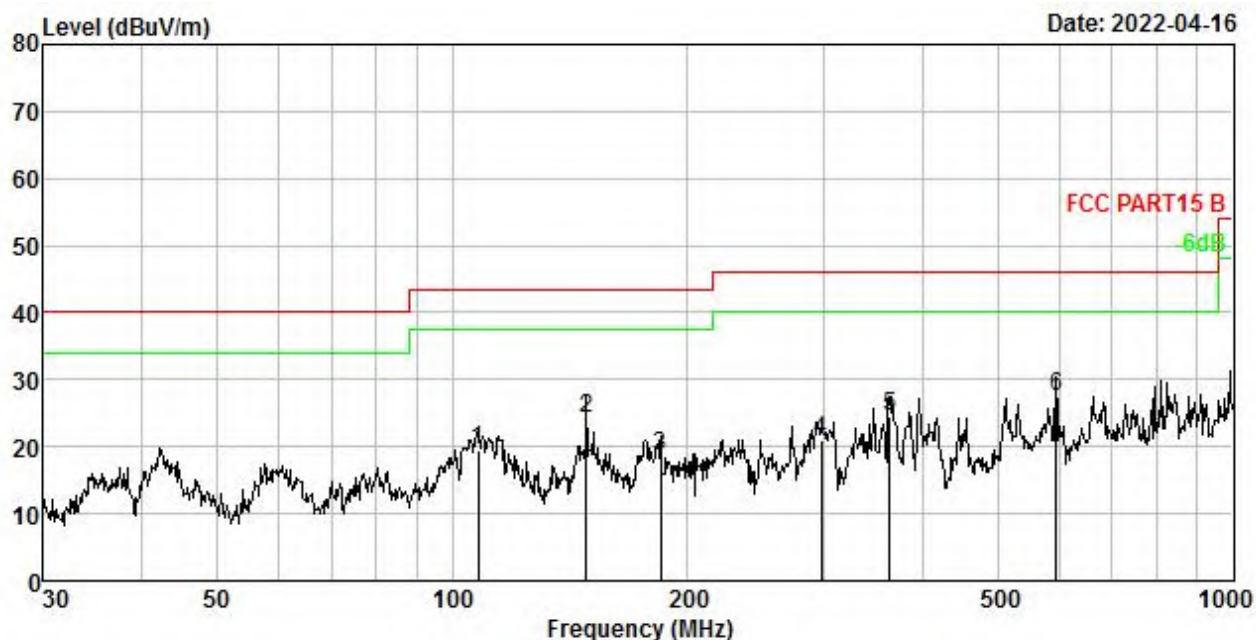
Test Frequency: 30MHz ~ 1GHz

All the modulation modes were tested the data of the worst mode (TX 802.11a Channel 36, CH149) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following test plots:



Antenna Polarization: Horizontal(CH36)

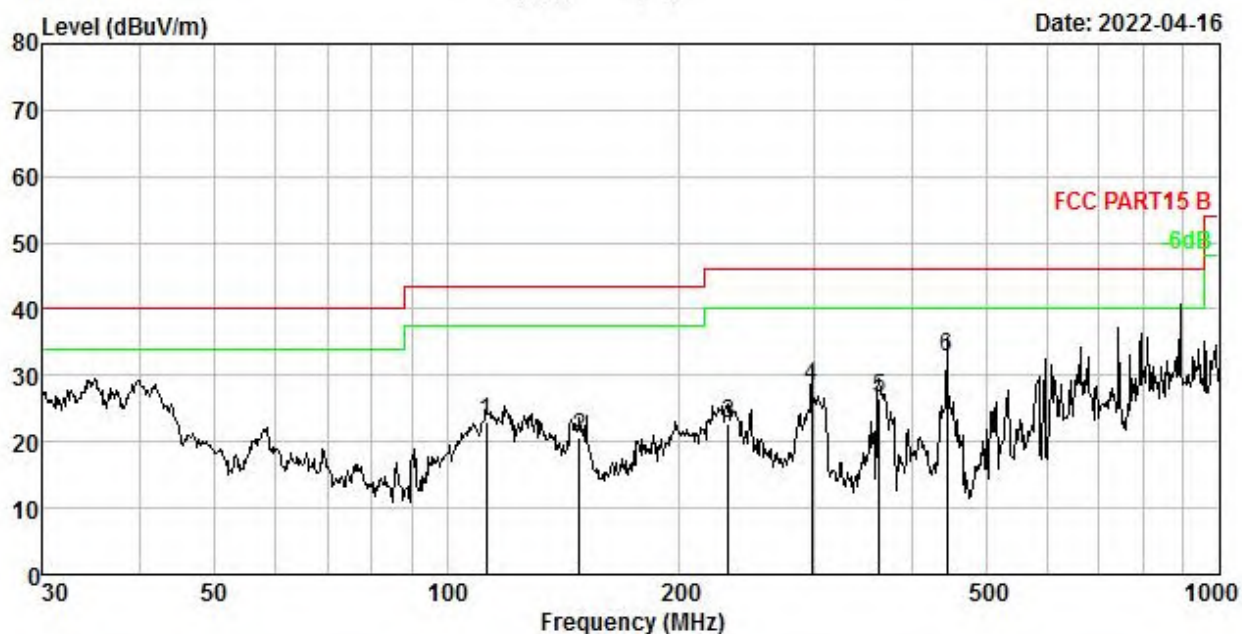


Env./Ins. : Temp.:24.5°C Humi.:52% Press.:101.3 kPa

No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	107.888	3.40	10.56	35.47	30.00	19.43	43.50	-24.07	QP
2.	148.441	3.95	13.65	36.75	30.02	24.33	43.50	-19.17	QP
3.	185.138	4.33	12.10	32.28	30.03	18.68	43.50	-24.82	QP
4.	297.224	5.14	13.16	32.87	30.31	20.86	46.00	-25.14	QP
5.	362.985	5.49	14.51	35.05	30.57	24.48	46.00	-21.52	QP
6.	593.050	6.33	18.67	33.38	31.00	27.38	46.00	-18.62	QP

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor

Antenna Polarization: Vertical (CH36)



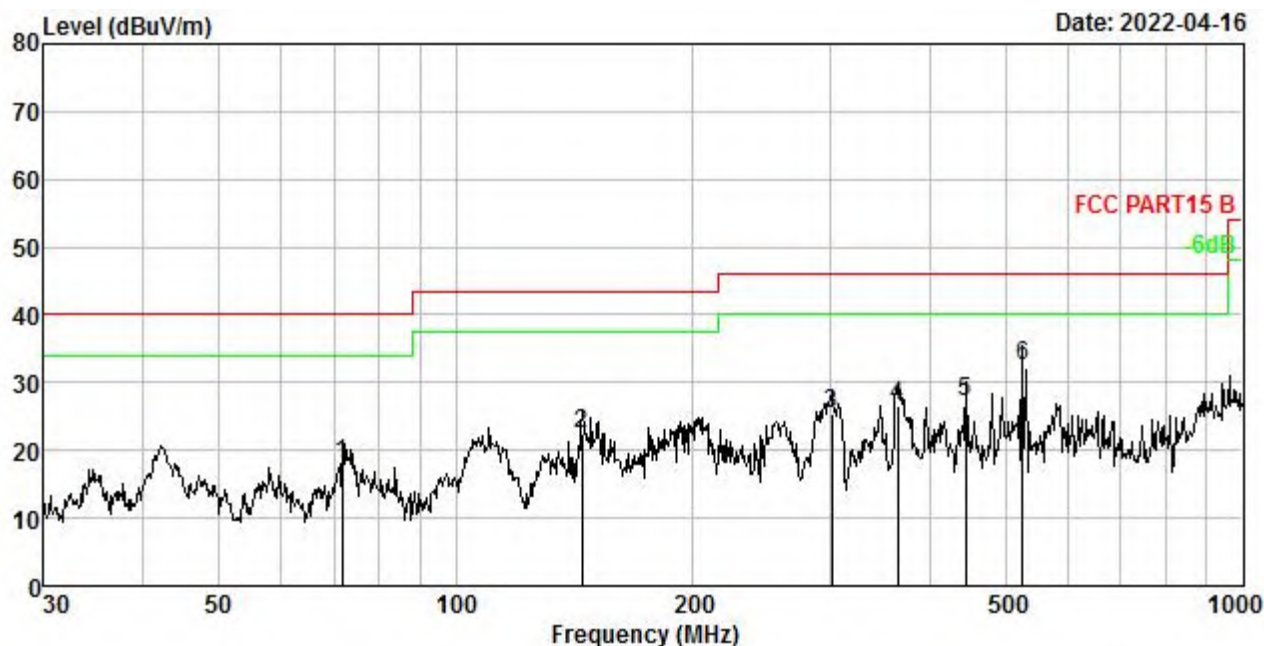
Env./Ins. : Temp.:24.5°C Humi.:52% Press.:101.3 kPa

No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	112.524	3.48	11.11	38.45	30.00	23.04	43.50	-20.46	QP
2.	148.441	3.95	13.65	33.00	30.02	20.58	43.50	-22.92	QP
3.	231.718	4.71	11.99	36.16	30.14	22.72	46.00	-23.28	QP
4.	297.224	5.14	13.16	40.43	30.31	28.42	46.00	-17.58	QP
5.	362.985	5.49	14.51	37.24	30.57	26.67	46.00	-19.33	QP
6.	444.851	5.84	15.79	42.00	30.80	32.83	46.00	-13.17	QP

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor



Antenna Polarization: Horizontal(CH149)



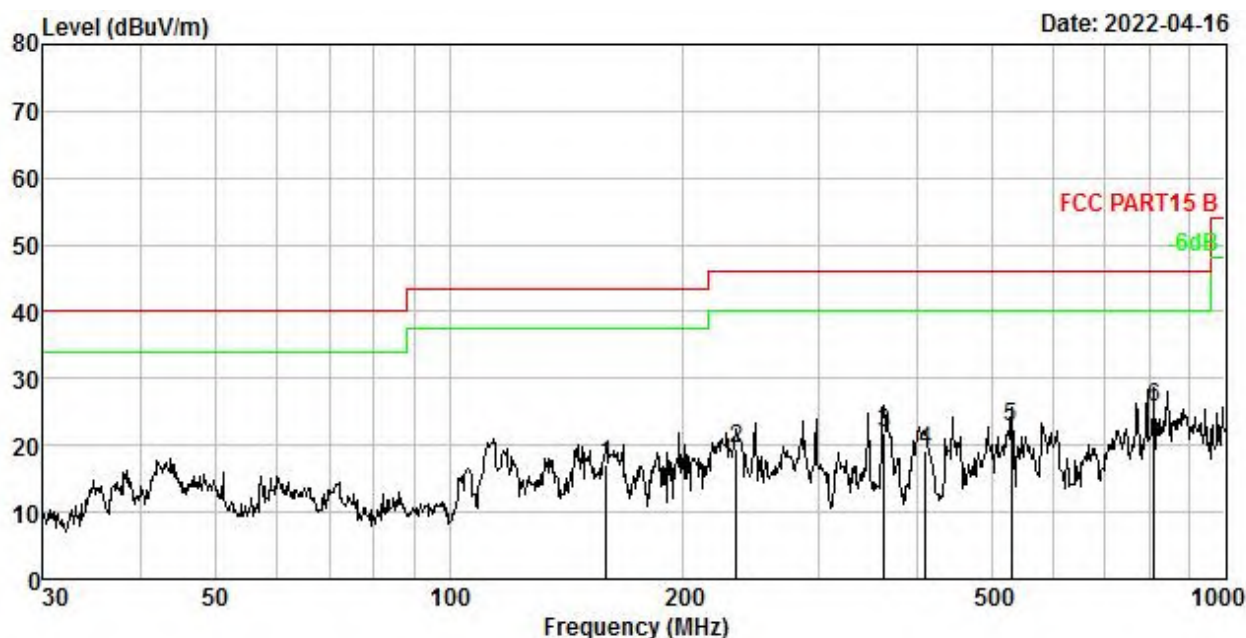
Env./Ins. : Temp.:24.5°C Humi.:52% Press.:101.3 kPa

No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamplifier Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	71.832	2.70	9.84	35.30	29.96	17.88	40.00	-22.12	QP
2.	144.842	3.91	13.50	35.18	30.02	22.57	43.50	-20.93	QP
3.	300.367	5.16	13.21	37.45	30.32	25.50	46.00	-20.50	QP
4.	364.260	5.50	14.52	37.24	30.58	26.68	46.00	-19.32	QP
5.	444.851	5.84	15.79	36.25	30.80	27.08	46.00	-18.92	QP
6.	524.554	6.12	17.80	39.38	30.93	32.37	46.00	-13.63	QP

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor



Antenna Polarization: Vertical (CH149)



Env./Ins. : Temp.:24.5°C Humi.:52% Press.:101.3 kPa

No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	159.225	4.07	14.07	28.95	30.02	17.07	43.50	-26.43	QP
2.	234.168	4.73	12.06	32.90	30.15	19.54	46.00	-26.46	QP
3.	362.985	5.49	14.51	32.41	30.57	21.84	46.00	-24.16	QP
4.	410.383	5.70	15.04	29.27	30.72	19.29	46.00	-26.71	QP
5.	530.101	6.14	17.96	29.59	30.94	22.75	46.00	-23.25	QP
6.	810.265	6.87	21.44	28.48	31.16	25.63	46.00	-20.37	QP

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor



Test Frequency: From 1GHz to 40GHz

Pre-scan all test modes

Only the worst case Main Antenna A test data.

Antenna A 802.11a

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	47.53	35.22	5.36	31.25	56.86	68.23	-11.37	V
15540	42.25	35.96	7.85	30.63	55.43	68.23	-12.8	V
20720	43.39	39.12	8.56	34.95	56.12	68.23	-12.11	V
10360	48.27	34.12	5.36	31.25	56.5	68.23	-11.73	H
15540	42.26	36.52	7.85	30.63	56	68.23	-12.23	H
20720	42.81	40.01	8.56	34.95	56.43	68.23	-11.8	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	33.26	34.56	5.36	31.25	41.93	54	-12.07	V
15540	30.21	36.22	7.85	30.63	43.65	54	-10.35	V
20720	28.05	38.97	8.56	34.95	40.63	54	-13.37	V
10360	32.36	33.57	5.36	31.25	40.04	54	-13.96	H
15540	24.78	36.49	7.85	30.63	38.49	54	-15.51	H
20720	27.16	39.92	8.56	34.95	40.69	54	-13.31	H



Antenna A 802.11a

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	47.85	35.63	5.36	31.25	57.59	68.23	-10.64	V
15600	43.33	35.91	7.85	30.63	56.46	68.23	-11.77	V
20800	44.28	39.67	8.56	34.95	57.56	68.23	-10.67	V
10400	46.86	34.25	5.36	31.25	55.22	68.23	-13.01	H
15600	42.05	37.02	7.85	30.63	56.29	68.23	-11.94	H
20800	43.39	38.88	8.56	34.95	55.88	68.23	-12.35	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	33.69	34.39	5.36	31.25	42.19	54	-11.81	V
15600	28.87	36.74	7.85	30.63	42.83	54	-11.17	V
20800	29.52	38.96	8.56	34.95	42.09	54	-11.91	V
10400	33.05	33.77	5.36	31.25	40.93	54	-13.07	H
15600	29.01	36.69	7.85	30.63	42.92	54	-11.08	H
20800	30.09	39.35	8.56	34.95	43.05	54	-10.95	H



Antenna A 802.11a

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.69	34.68	5.36	31.25	54.48	68.23	-13.75	V
17520	43.32	36.52	7.85	30.63	57.06	68.23	-11.17	V
20960	44.14	38.77	8.56	34.95	56.52	68.23	-11.71	V
10480	46.92	33.99	5.36	31.25	55.02	68.23	-13.21	H
17520	45.25	36.84	7.85	30.63	59.31	68.23	-8.92	H
20960	46.21	39.93	8.56	34.95	59.75	68.23	-8.48	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	33.32	34.82	5.36	31.25	42.25	54	-11.75	V
17520	28.96	36.91	7.85	30.63	43.09	54	-10.91	V
20960	30.02	38.74	8.56	34.95	42.37	54	-11.63	V
10480	32.25	33.95	5.36	31.25	40.31	54	-13.69	H
17520	27.11	36.63	7.85	30.63	40.96	54	-13.04	H
20960	29.26	39.91	8.56	34.95	42.78	54	-11.22	H



Antenna A 802.11a

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	47.63	35.26	5.42	31.75	56.56	68.23	-11.67	V
17235	42.21	36.88	7.32	30.96	55.45	68.23	-12.78	V
22980	43.95	39.14	8.85	35.25	56.69	68.23	-11.54	V
11490	49.51	34.21	5.42	31.75	57.39	68.23	-10.84	H
17235	44.25	37.52	7.32	30.96	58.13	68.23	-10.1	H
22980	44.32	39.88	8.85	35.25	57.8	68.23	-10.43	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	32.25	34.96	5.42	31.75	40.88	54	-13.12	V
17235	29.93	36.74	7.32	30.96	43.03	54	-10.97	V
22980	29.57	39.14	8.85	35.25	42.31	54	-11.69	V
11490	31.54	34.02	5.42	31.75	39.23	54	-14.77	H
17235	28.83	36.57	7.32	30.96	41.76	54	-12.24	H
22980	29.06	39.89	8.85	35.25	42.55	54	-11.45	H



Antenna A 802.11a

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	48.52	35.26	5.42	31.75	57.45	68.23	-10.78	V
17355	44.31	36.88	7.32	30.96	57.55	68.23	-10.68	V
23140	45.28	39.14	8.85	35.25	58.02	68.23	-10.21	V
11570	48.52	34.21	5.42	31.75	56.4	68.23	-11.83	H
17355	42.26	37.52	7.32	30.96	56.14	68.23	-12.09	H
23140	43.32	39.88	8.85	35.25	56.8	68.23	-11.43	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.22	34.96	5.42	31.75	41.85	54	-12.15	V
17355	29.53	36.74	7.32	30.96	42.63	54	-11.37	V
23140	28.54	39.14	8.85	35.25	41.28	54	-12.72	V
11570	34.61	34.02	5.42	31.75	42.3	54	-11.7	H
17355	29.56	36.57	7.32	30.96	42.49	54	-11.51	H
23140	29.35	39.89	8.85	35.25	42.84	54	-11.16	H



Antenna A 802.11a

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	48.57	35.26	5.42	31.75	57.5	68.23	-10.73	V
17475	44.52	36.88	7.32	30.96	57.76	68.23	-10.47	V
23300	45.61	39.14	8.85	35.25	58.35	68.23	-9.88	V
11650	49.35	34.21	5.42	31.75	57.23	68.23	-11	H
17475	44.41	37.52	7.32	30.96	58.29	68.23	-9.94	H
23300	45.02	39.88	8.85	35.25	58.5	68.23	-9.73	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	34.52	34.96	5.42	31.75	43.15	54	-10.85	V
17475	28.56	36.74	7.32	30.96	41.66	54	-12.34	V
23300	30.01	39.14	8.85	35.25	42.75	54	-11.25	V
11650	33.69	34.02	5.42	31.75	41.38	54	-12.62	H
17475	28.46	36.57	7.32	30.96	41.39	54	-12.61	H
23300	28.51	39.89	8.85	35.25	42	54	-12	H



Antenna A 802.11n20

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	45.52	34.56	5.36	31.25	54.19	68.23	-14.04	V
15540	43.06	36.22	7.85	30.63	56.5	68.23	-11.73	V
20720	44.18	38.97	8.56	34.95	56.76	68.23	-11.47	V
10360	49.21	33.57	5.36	31.25	56.89	68.23	-11.34	H
15540	40.29	36.49	7.85	30.63	54	68.23	-14.23	H
20720	41.87	39.92	8.56	34.95	55.4	68.23	-12.83	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	32.25	34.56	5.36	31.25	40.92	54	-13.08	V
15540	29.54	36.22	7.85	30.63	42.98	54	-11.02	V
20720	28.16	38.97	8.56	34.95	40.74	54	-13.26	V
10360	32.08	33.57	5.36	31.25	39.76	54	-14.24	H
15540	27.11	36.49	7.85	30.63	40.82	54	-13.18	H
20720	28.01	39.92	8.56	34.95	41.54	54	-12.46	H



Antenna A 802.11n20

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	48.46	34.63	5.36	31.25	57.2	68.23	-11.03	V
15600	44.24	36.42	7.85	30.63	57.88	68.23	-10.35	V
20800	45.13	38.81	8.56	34.95	57.55	68.23	-10.68	V
10400	47.91	33.93	5.36	31.25	55.95	68.23	-12.28	H
15600	43.33	36.55	7.85	30.63	57.1	68.23	-11.13	H
20800	44.12	39.94	8.56	34.95	57.67	68.23	-10.56	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	32.66	34.39	5.36	31.25	41.16	54	-12.84	V
15600	28.51	36.74	7.85	30.63	42.47	54	-11.53	V
20800	29.07	38.96	8.56	34.95	41.64	54	-12.36	V
10400	33.36	33.77	5.36	31.25	41.24	54	-12.76	H
15600	28.55	36.69	7.85	30.63	42.46	54	-11.54	H
20800	29.76	39.35	8.56	34.95	42.72	54	-11.28	H



Antenna A 802.11n20

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.58	34.68	5.36	31.25	54.37	68.23	-13.86	V
17520	44.61	36.52	7.85	30.63	58.35	68.23	-9.88	V
20960	42.95	38.77	8.56	34.95	55.33	68.23	-12.9	V
10480	46.63	33.99	5.36	31.25	54.73	68.23	-13.5	H
17520	45.87	36.84	7.85	30.63	59.93	68.23	-8.3	H
20960	44.13	39.93	8.56	34.95	57.67	68.23	-10.56	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	31.56	34.82	5.36	31.25	40.49	54	-13.51	V
17520	27.85	36.91	7.85	30.63	41.98	54	-12.02	V
20960	28.33	38.74	8.56	34.95	40.68	54	-13.32	V
10480	30.69	33.95	5.36	31.25	38.75	54	-15.25	H
17520	27.41	36.63	7.85	30.63	41.26	54	-12.74	H
20960	29.53	39.91	8.56	34.95	43.05	54	-10.95	H



Antenna A 802.11n20

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	49.36	35.26	5.42	31.75	58.29	68.23	-9.94	V
17235	42.58	36.88	7.32	30.96	55.82	68.23	-12.41	V
22980	43.17	39.14	8.85	35.25	55.91	68.23	-12.32	V
11490	49.32	34.21	5.42	31.75	57.2	68.23	-11.03	H
17235	44.06	37.52	7.32	30.96	57.94	68.23	-10.29	H
22980	45.02	39.88	8.85	35.25	58.5	68.23	-9.73	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	33.65	34.96	5.42	31.75	42.28	54	-11.72	V
17235	29.88	36.74	7.32	30.96	42.98	54	-11.02	V
22980	29.61	39.14	8.85	35.25	42.35	54	-11.65	V
11490	33.26	34.02	5.42	31.75	40.95	54	-13.05	H
17235	28.43	36.57	7.32	30.96	41.36	54	-12.64	H
22980	29.14	39.89	8.85	35.25	42.63	54	-11.37	H



Antenna A 802.11n20

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	45.83	35.26	5.42	31.75	54.76	68.23	-13.47	V
17355	44.12	36.88	7.32	30.96	57.36	68.23	-10.87	V
23140	45.07	39.14	8.85	35.25	57.81	68.23	-10.42	V
11570	48.21	34.21	5.42	31.75	56.09	68.23	-12.14	H
17355	42.65	37.52	7.32	30.96	56.53	68.23	-11.7	H
23140	41.99	39.88	8.85	35.25	55.47	68.23	-12.76	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.62	34.96	5.42	31.75	42.25	54	-11.75	V
17355	30.24	36.74	7.32	30.96	43.34	54	-10.66	V
23140	29.51	39.14	8.85	35.25	42.25	54	-11.75	V
11570	33.61	34.02	5.42	31.75	41.3	54	-12.7	H
17355	29.87	36.57	7.32	30.96	42.8	54	-11.2	H
23140	29.35	39.89	8.85	35.25	42.84	54	-11.16	H



Antenna A 802.11n20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	47.63	35.26	5.42	31.75	56.56	68.23	-11.67	V
17475	44.51	36.88	7.32	30.96	57.75	68.23	-10.48	V
23300	45.08	39.14	8.85	35.25	57.82	68.23	-10.41	V
11650	49.21	34.21	5.42	31.75	57.09	68.23	-11.14	H
17475	44.65	37.52	7.32	30.96	58.53	68.23	-9.7	H
23300	45.33	39.88	8.85	35.25	58.81	68.23	-9.42	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	35.62	34.96	5.42	31.75	44.25	54	-9.75	V
17475	28.98	36.74	7.32	30.96	42.08	54	-11.92	V
23300	27.84	39.14	8.85	35.25	40.58	54	-13.42	V
11650	33.11	34.02	5.42	31.75	40.8	54	-13.2	H
17475	28.56	36.57	7.32	30.96	41.49	54	-12.51	H
23300	29.04	39.89	8.85	35.25	42.53	54	-11.47	H



Antenna A 802.11ac20

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	46.63	34.56	5.36	31.25	55.3	68.23	-12.93	V
15540	43.32	36.22	7.85	30.63	56.76	68.23	-11.47	V
20720	44.05	38.97	8.56	34.95	56.63	68.23	-11.6	V
10360	47.56	33.57	5.36	31.25	55.24	68.23	-12.99	H
15540	43.23	36.49	7.85	30.63	56.94	68.23	-11.29	H
20720	44.05	39.92	8.56	34.95	57.58	68.23	-10.65	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	32.23	34.56	5.36	31.25	40.9	54	-13.1	V
15540	30.56	36.22	7.85	30.63	44	54	-10.00	V
20720	29.83	38.97	8.56	34.95	42.41	54	-11.59	V
10360	35.62	33.57	5.36	31.25	43.3	54	-10.7	H
15540	26.55	36.49	7.85	30.63	40.26	54	-13.74	H
20720	27.74	39.92	8.56	34.95	41.27	54	-12.73	H



Antenna A 802.11ac20

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	48.87	34.63	5.36	31.25	57.61	68.23	-10.62	V
15600	44.19	36.42	7.85	30.63	57.83	68.23	-10.4	V
20800	45.27	38.81	8.56	34.95	57.69	68.23	-10.54	V
10400	47.56	33.93	5.36	31.25	55.6	68.23	-12.63	H
15600	43.36	36.55	7.85	30.63	57.13	68.23	-11.1	H
20800	44.12	39.94	8.56	34.95	57.67	68.23	-10.56	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	33.32	34.39	5.36	31.25	41.82	54	-12.18	V
15600	28.54	36.74	7.85	30.63	42.5	54	-11.5	V
20800	29.17	38.96	8.56	34.95	41.74	54	-12.26	V
10400	33.63	33.77	5.36	31.25	41.51	54	-12.49	H
15600	28.51	36.69	7.85	30.63	42.42	54	-11.58	H
20800	29.31	39.35	8.56	34.95	42.27	54	-11.73	H



Antenna A 802.11ac20

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	46.52	34.68	5.36	31.25	55.31	68.23	-12.92	V
17520	42.87	36.52	7.85	30.63	56.61	68.23	-11.62	V
20960	44.13	38.77	8.56	34.95	56.51	68.23	-11.72	V
10480	48.56	33.99	5.36	31.25	56.66	68.23	-11.57	H
17520	45.55	36.84	7.85	30.63	59.61	68.23	-8.62	H
20960	44.23	39.93	8.56	34.95	57.77	68.23	-10.46	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	31.55	34.82	5.36	31.25	40.48	54	-13.52	V
17520	27.45	36.91	7.85	30.63	41.58	54	-12.42	V
20960	28.69	38.74	8.56	34.95	41.04	54	-12.96	V
10480	32.36	33.95	5.36	31.25	40.42	54	-13.58	H
17520	27.44	36.63	7.85	30.63	41.29	54	-12.71	H
20960	29.55	39.91	8.56	34.95	43.07	54	-10.93	H



Antenna A 802.11ac20

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	47.46	35.26	5.42	31.75	56.39	68.23	-11.84	V
17235	43.32	36.88	7.32	30.96	56.56	68.23	-11.67	V
22980	44.03	39.14	8.85	35.25	56.77	68.23	-11.46	V
11490	48.19	34.21	5.42	31.75	56.07	68.23	-12.16	H
17235	44.26	37.52	7.32	30.96	58.14	68.23	-10.09	H
22980	44.02	39.88	8.85	35.25	57.5	68.23	-10.73	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	32.25	34.96	5.42	31.75	40.88	54	-13.12	V
17235	28.56	36.74	7.32	30.96	41.66	54	-12.34	V
22980	29.57	39.14	8.85	35.25	42.31	54	-11.69	V
11490	33.11	34.02	5.42	31.75	40.8	54	-13.2	H
17235	28.65	36.57	7.32	30.96	41.58	54	-12.42	H
22980	28.94	39.89	8.85	35.25	42.43	54	-11.57	H



Antenna A 802.11ac20

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	47.51	35.26	5.42	31.75	56.44	68.23	-11.79	V
17355	43.33	36.88	7.32	30.96	56.57	68.23	-11.66	V
23140	44.25	39.14	8.85	35.25	56.99	68.23	-11.24	V
11570	47.06	34.21	5.42	31.75	54.94	68.23	-13.29	H
17355	41.13	37.52	7.32	30.96	55.01	68.23	-13.22	H
23140	42.92	39.88	8.85	35.25	56.4	68.23	-11.83	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.65	34.96	5.42	31.75	42.28	54	-11.72	V
17355	29.49	36.74	7.32	30.96	42.59	54	-11.41	V
23140	28.96	39.14	8.85	35.25	41.7	54	-12.3	V
11570	33.73	34.02	5.42	31.75	41.42	54	-12.58	H
17355	29.81	36.57	7.32	30.96	42.74	54	-11.26	H
23140	29.43	39.89	8.85	35.25	42.92	54	-11.08	H



Antenna A 802.11ac20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	47.63	35.26	5.42	31.75	56.56	68.23	-11.67	V
17475	44.52	36.88	7.32	30.96	57.76	68.23	-10.47	V
23300	45.33	39.14	8.85	35.25	58.07	68.23	-10.16	V
11650	49.82	34.21	5.42	31.75	57.7	68.23	-10.53	H
17475	42.21	37.52	7.32	30.96	56.09	68.23	-12.14	H
23300	43.36	39.88	8.85	35.25	56.84	68.23	-11.39	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	33.06	34.96	5.42	31.75	41.69	54	-12.31	V
17475	27.88	36.74	7.32	30.96	40.98	54	-13.02	V
23300	28.49	39.14	8.85	35.25	41.23	54	-12.77	V
11650	33.25	34.02	5.42	31.75	40.94	54	-13.06	H
17475	28.16	36.57	7.32	30.96	41.09	54	-12.91	H
23300	28.37	39.89	8.85	35.25	41.86	54	-12.14	H



Antenna A 802.11n40

Test Mode:5190					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	46.36	35.26	5.42	31.75	55.29	68.23	-12.94	V
15570	42.79	36.88	7.32	30.96	56.03	68.23	-12.2	V
20760	42.61	39.14	8.85	35.25	55.35	68.23	-12.88	V
10380	47.02	34.21	5.42	31.75	54.9	68.23	-13.33	H
15570	42.98	37.52	7.32	30.96	56.86	68.23	-11.37	H
20760	43.13	39.88	8.85	35.25	56.61	68.23	-11.62	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	32.02	34.96	5.42	31.75	40.65	54	-13.35	V
15570	27.91	36.74	7.32	30.96	41.01	54	-12.99	V
20760	29.03	39.14	8.85	35.25	41.77	54	-12.23	V
10380	33.12	34.02	5.42	31.75	40.81	54	-13.19	H
15570	28.54	36.57	7.32	30.96	41.47	54	-12.53	H
20760	28.88	39.89	8.85	35.25	42.37	54	-11.63	H



Antenna A 802.11n40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	47.14	35.26	5.42	31.75	56.07	68.23	-12.16	V
15690	42.66	36.88	7.32	30.96	55.9	68.23	-12.33	V
20920	43.31	39.14	8.85	35.25	56.05	68.23	-12.18	V
10460	46.52	34.21	5.42	31.75	54.4	68.23	-13.83	H
15690	42.02	37.52	7.32	30.96	55.9	68.23	-12.33	H
20920	43.16	39.88	8.85	35.25	56.64	68.23	-11.59	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	33.52	34.96	5.42	31.75	42.15	54	-11.85	V
15690	27.22	36.74	7.32	30.96	40.32	54	-13.68	V
20920	29.56	39.14	8.85	35.25	42.3	54	-11.7	V
10460	35.61	34.02	5.42	31.75	43.3	54	-10.7	H
15690	27.46	36.57	7.32	30.96	40.39	54	-13.61	H
20920	28.54	39.89	8.85	35.25	42.03	54	-11.97	H



Antenna A 802.11ac40

Test Mode:5190					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	47.04	35.26	5.42	31.75	55.97	68.23	-12.26	V
15570	44.21	36.88	7.32	30.96	57.45	68.23	-10.78	V
20760	45.32	39.14	8.85	35.25	58.06	68.23	-10.17	V
10380	49.65	34.21	5.42	31.75	57.53	68.23	-10.7	H
15570	44.28	37.52	7.32	30.96	58.16	68.23	-10.07	H
20760	45.16	39.88	8.85	35.25	58.64	68.23	-9.59	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	33.05	34.96	5.42	31.75	41.68	54	-12.32	V
15570	28.45	36.74	7.32	30.96	41.55	54	-12.45	V
20760	27.74	39.14	8.85	35.25	40.48	54	-13.52	V
10380	33.33	34.02	5.42	31.75	41.02	54	-12.98	H
15570	27.69	36.57	7.32	30.96	40.62	54	-13.38	H
20760	28.22	39.89	8.85	35.25	41.71	54	-12.29	H



Antenna A 802.11ac40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	46.66	35.26	5.42	31.75	55.59	68.23	-12.64	V
15690	42.87	36.88	7.32	30.96	56.11	68.23	-12.12	V
20920	43.31	39.14	8.85	35.25	56.05	68.23	-12.18	V
10460	46.39	34.21	5.42	31.75	54.27	68.23	-13.96	H
15690	43.05	37.52	7.32	30.96	56.93	68.23	-11.3	H
20920	42.16	39.88	8.85	35.25	55.64	68.23	-12.59	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	34.19	34.96	5.42	31.75	42.82	54	-11.18	V
15690	28.47	36.74	7.32	30.96	41.57	54	-12.43	V
20920	29.16	39.14	8.85	35.25	41.9	54	-12.1	V
10460	33.25	34.02	5.42	31.75	40.94	54	-13.06	H
15690	28.65	36.57	7.32	30.96	41.58	54	-12.42	H
20920	28.15	39.89	8.85	35.25	41.64	54	-12.36	H

Note:

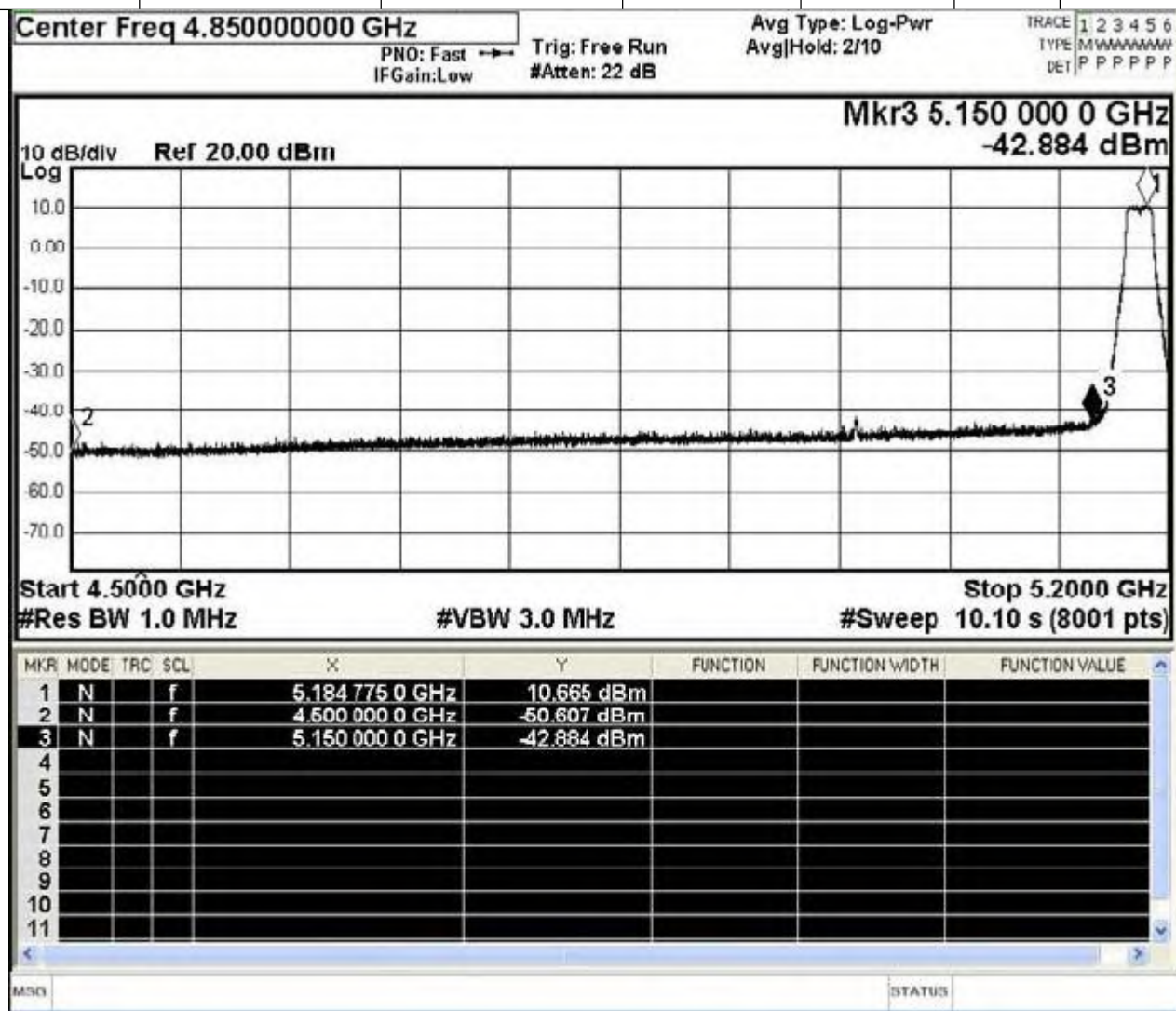
1. The testing has been conformed to 10*5825MHz=58250MHz.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor
Margin=Emission Level-Limit
4. X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.



Undesirable emission

Antenna A 802.11a Channel 36 5180MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
4500	-50.61	3	-47.61	-27	-20.61	PASS
5150	-42.88	3	-39.88	-27	-12.88	

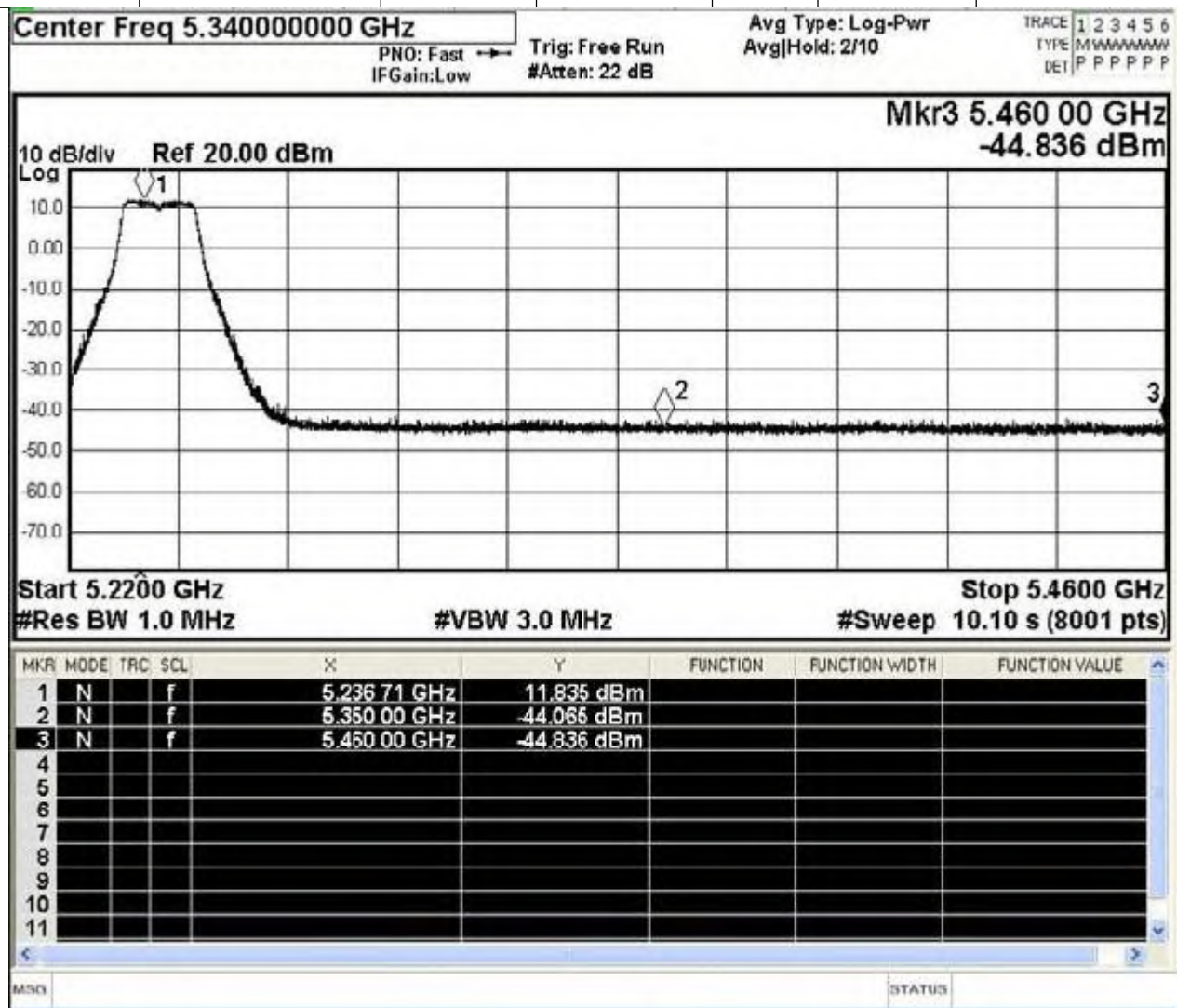




Report No.: PTC22021806201E-FC03

Antenna A 802.11a Channel 48 5240MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5460	-44.836	3	-41.836	-27	-14.836	PASS
5350	-44.065	3	-41.065	-27	-14.065	

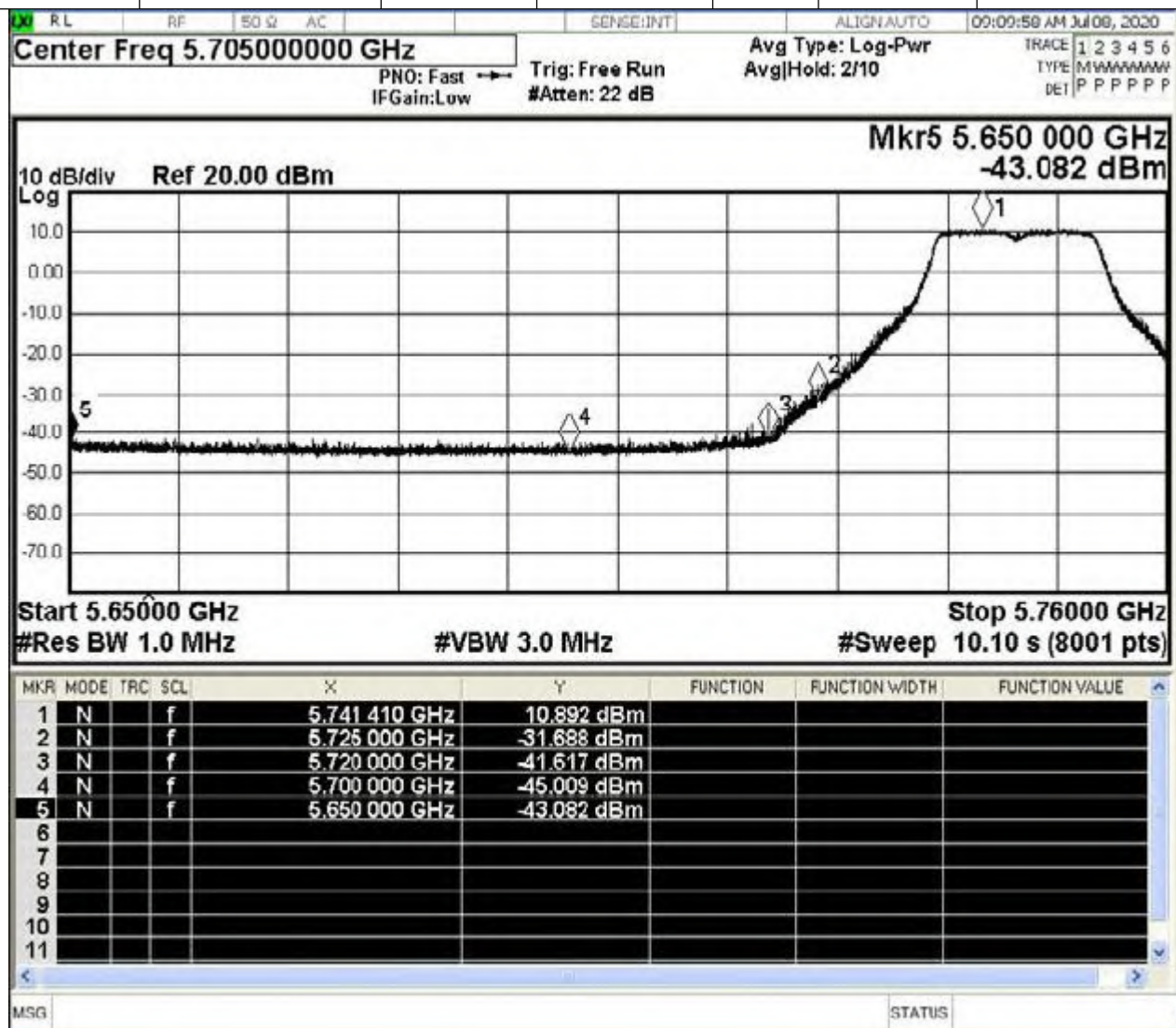




Report No.: PTC22021806201E-FC03

Antenna A 802.11a Channel 149 5745MHz

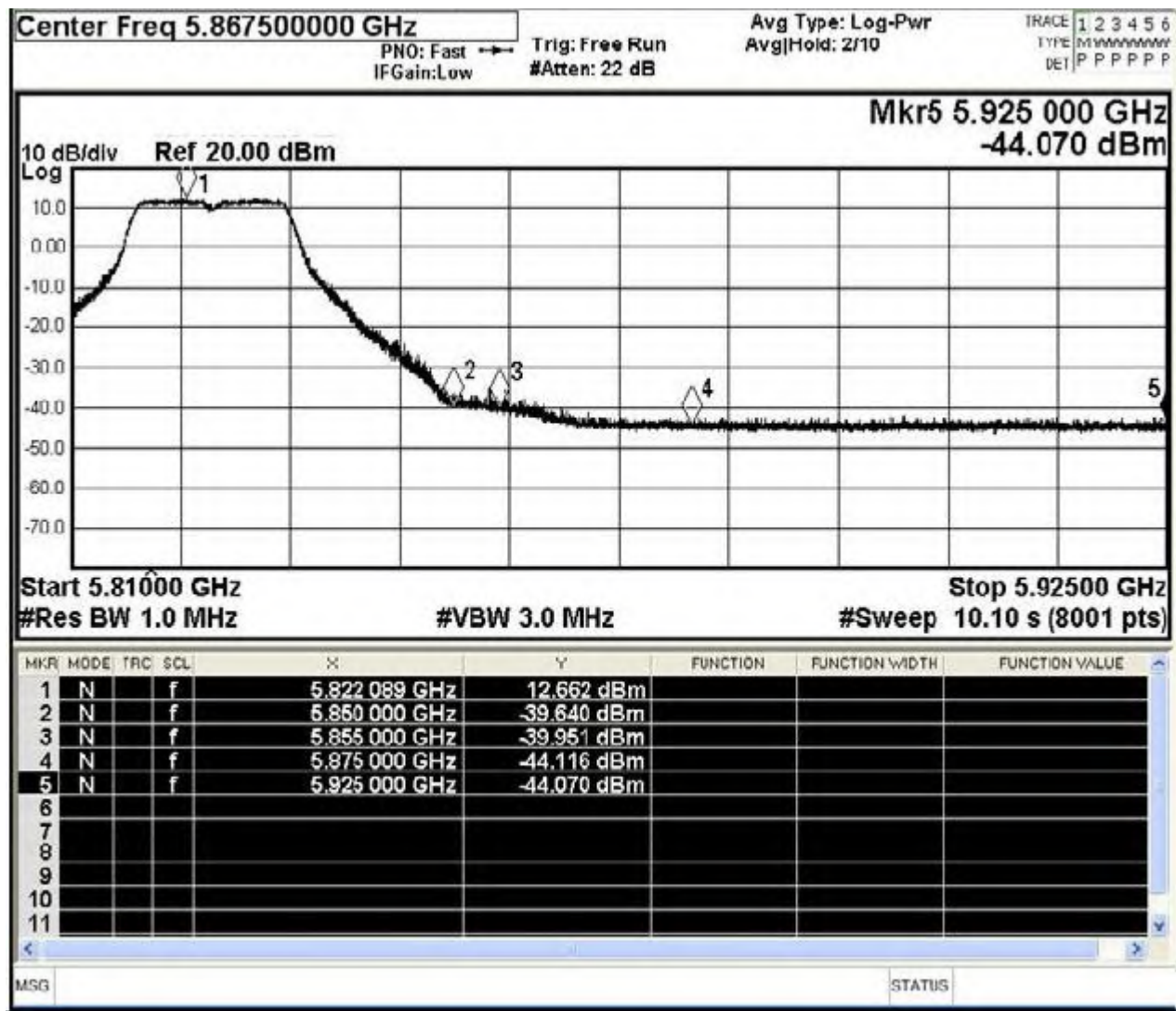
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5650	-43.082	3	-40.082	-27	-13.082	PASS
5700	-45.009	3	-42.009	10	-52.009	
5720	-41.617	3	-38.617	15.6	-54.217	
5725	-31.688	3	-28.688	27	-55.688	





Antenna A 802.11a Channel 165 5825MHz

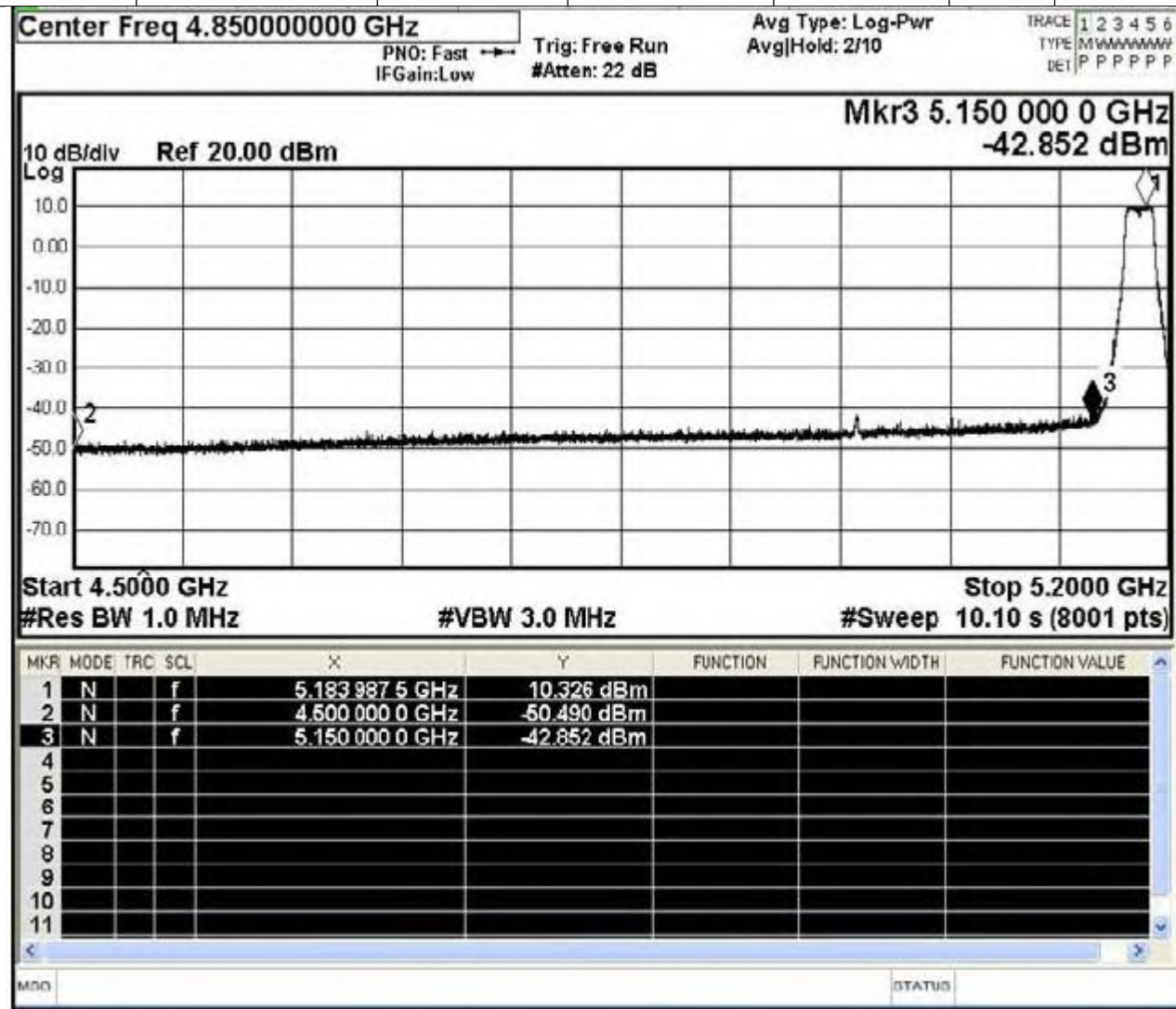
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5850	-39.64	3	-36.64	27	-63.64	PASS
5855	-39.951	3	-36.951	15.6	-52.551	
5875	-44.116	3	-41.116	10	-51.116	
5925	-44.07	3	-41.07	-27	-14.07	





Antenna A 802.11n20 Channel 36 5180MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
4500	-50.49	3	-47.49	-27	-20.49	PASS
5150	-42.852	3	-39.852	-27	-12.852	

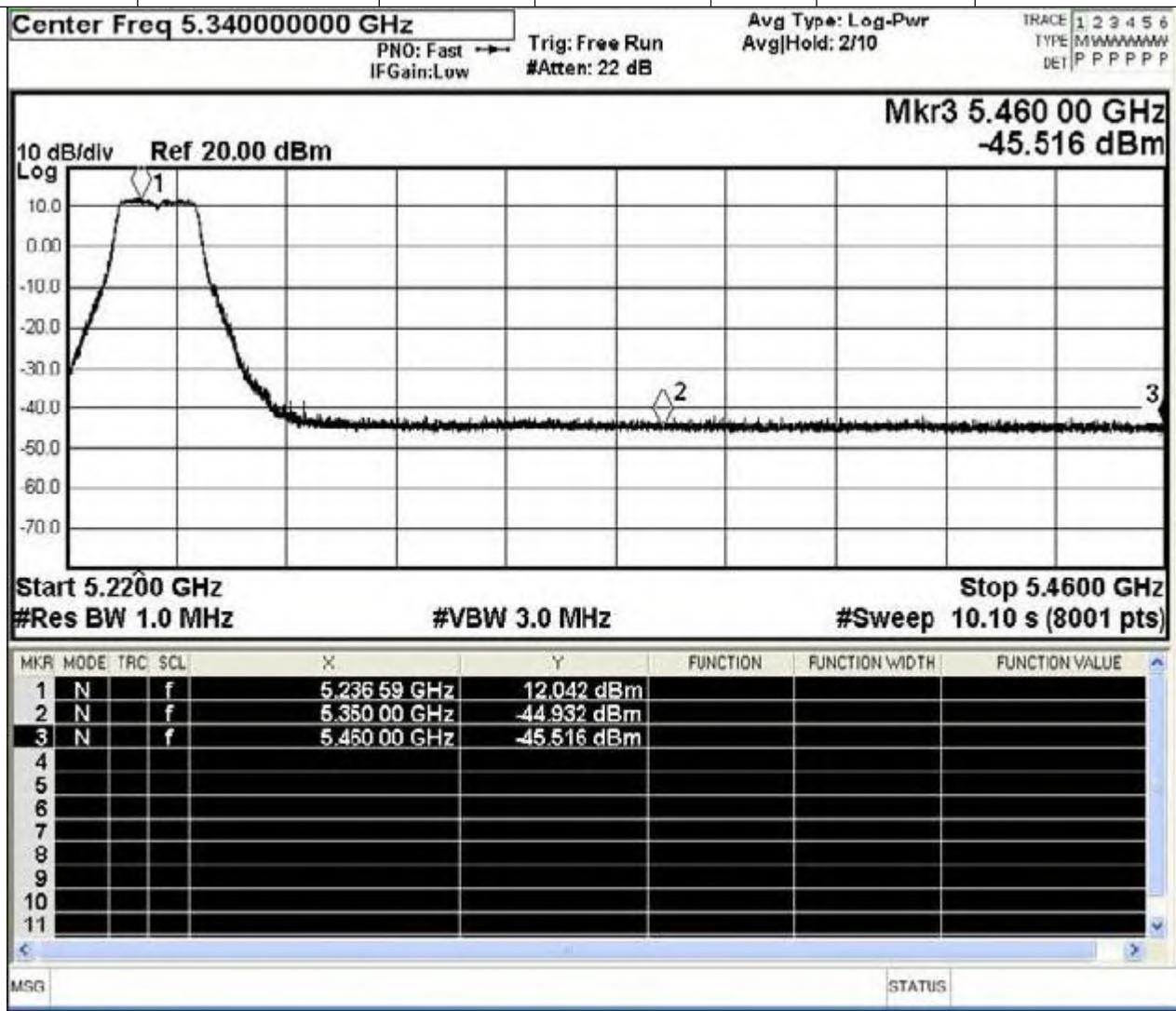




Report No.: PTC22021806201E-FC03

Antenna A 802.11n20 Channel 48 5240MHz

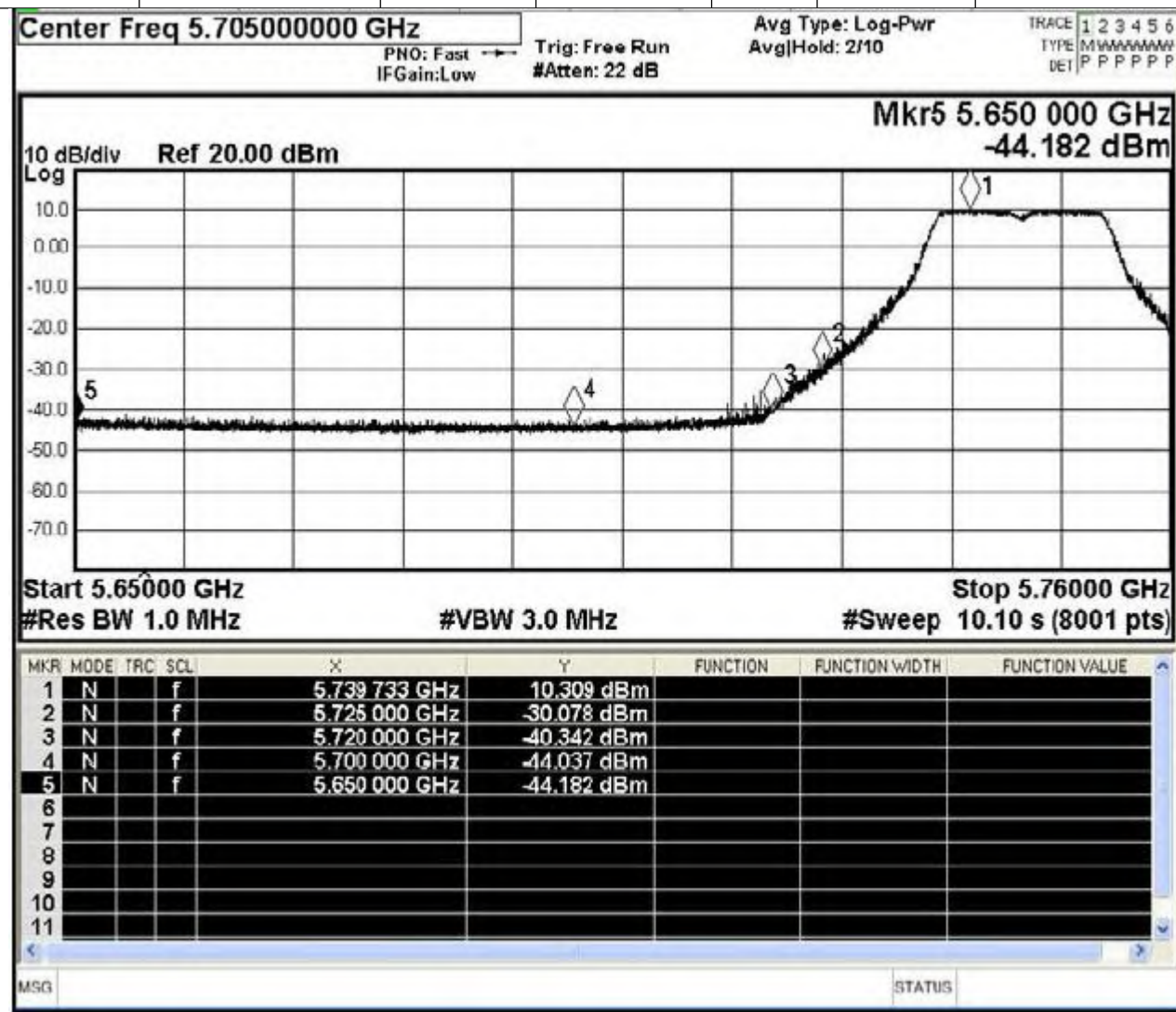
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5460	-45.516	3	-42.516	-27	-15.516	PASS
5350	-44.932	3	-41.932	-27	-14.932	





Antenna A 802.11n20 Channel 149 5745MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5650	-44.182	3	-41.182	-27	-14.182	PASS
5700	-44.037	3	-41.037	10	-51.037	
5720	-40.342	3	-37.342	15.6	-52.942	
5725	-30.078	3	-27.078	27	-54.078	

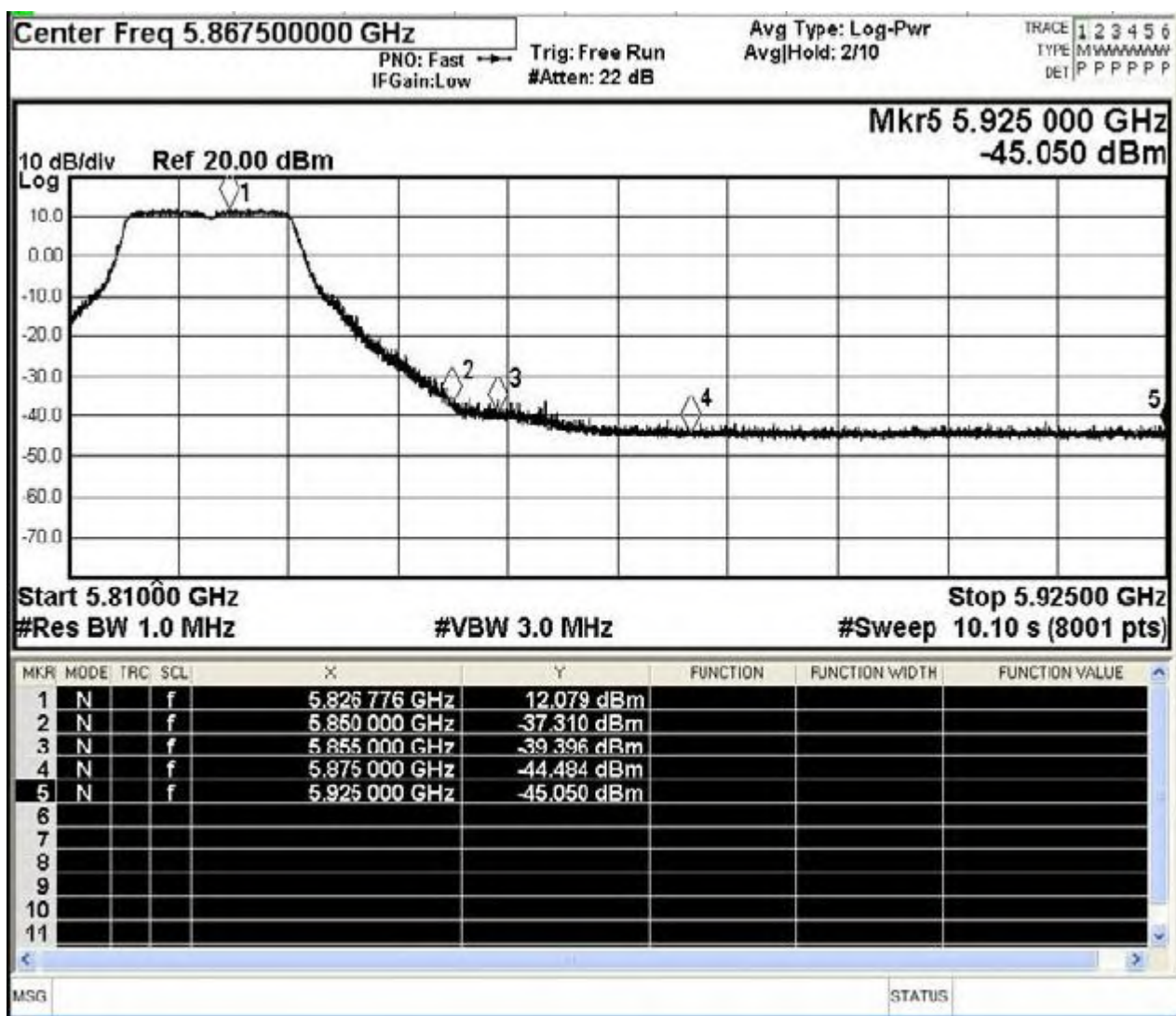




Report No.: PTC22021806201E-FC03

Antenna A 802.11n20 Channel 165 5825MHz

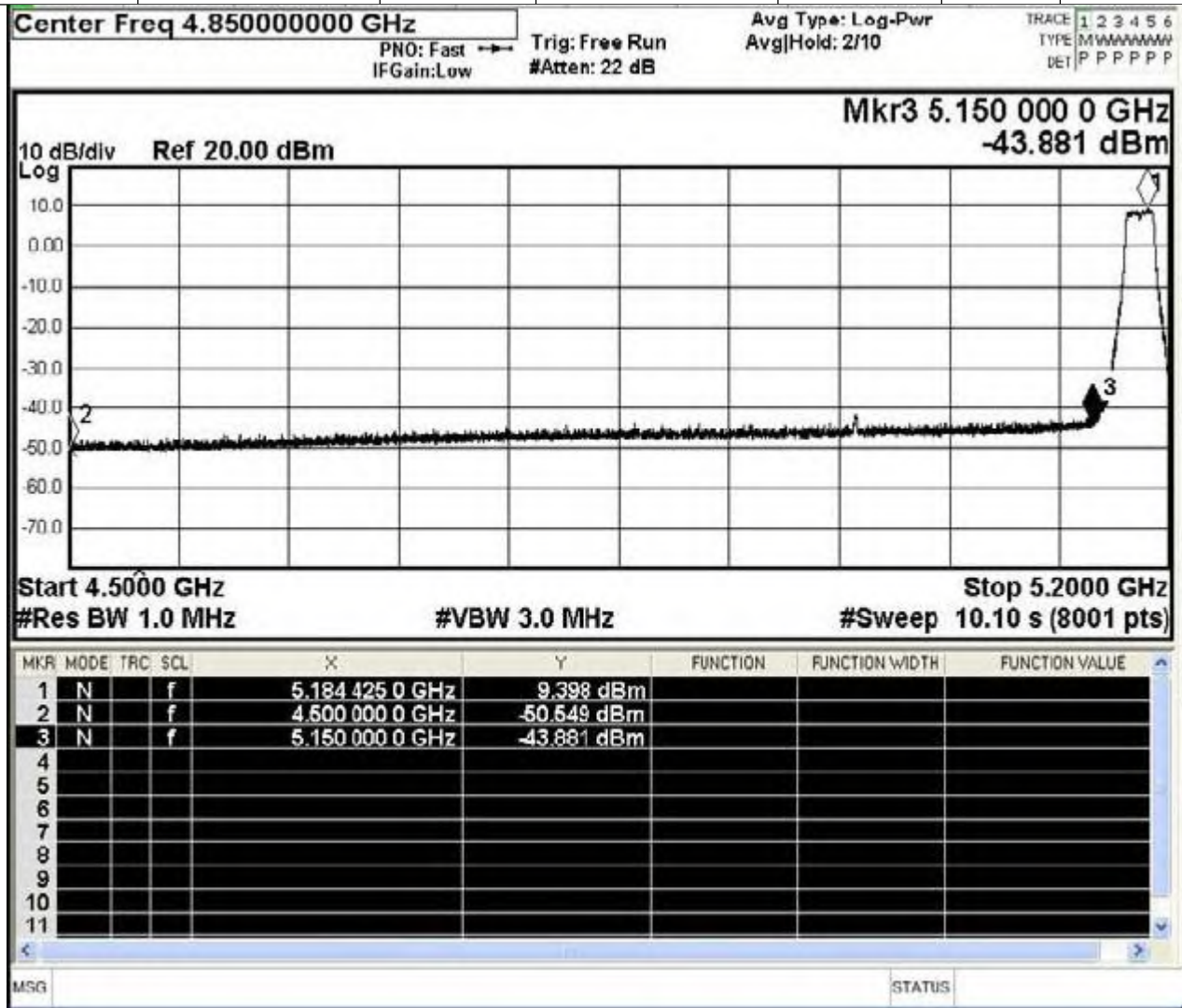
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5850	-37.31	3	-34.31	27	-61.31	PASS
5855	-39.396	3	-36.396	15.6	-51.996	
5875	-44.484	3	-41.484	10	-51.484	
5925	-45.05	3	-42.05	-27	-15.05	





Antenna A 802.11ac 20 Channel 36 5180MHz

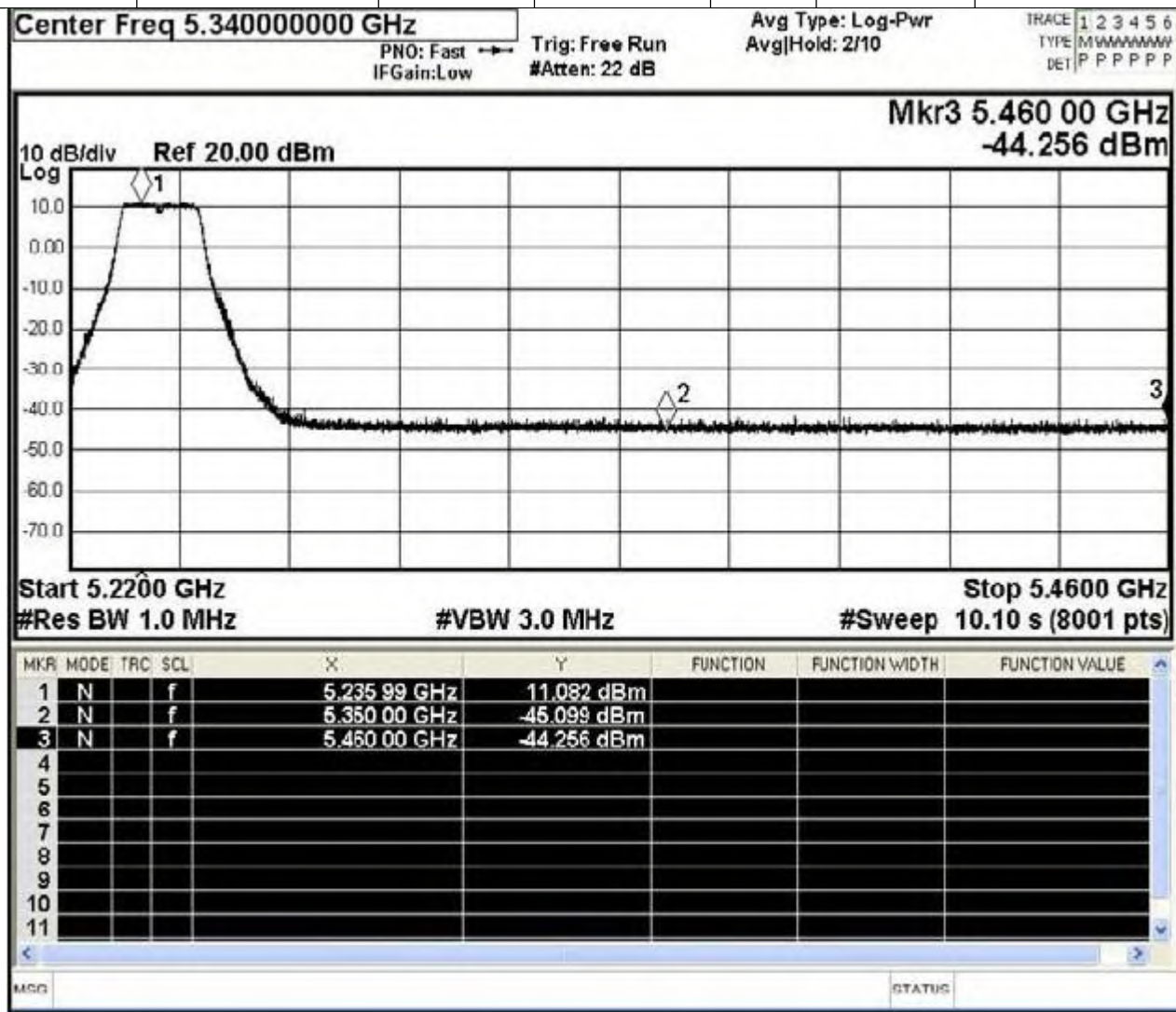
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
4500	-50.549	3	-47.549	-27	-20.549	PASS
5150	-43.881	3	-40.881	-27	-13.881	





Antenna A 802.11ac20 Channel 48 5240MHz

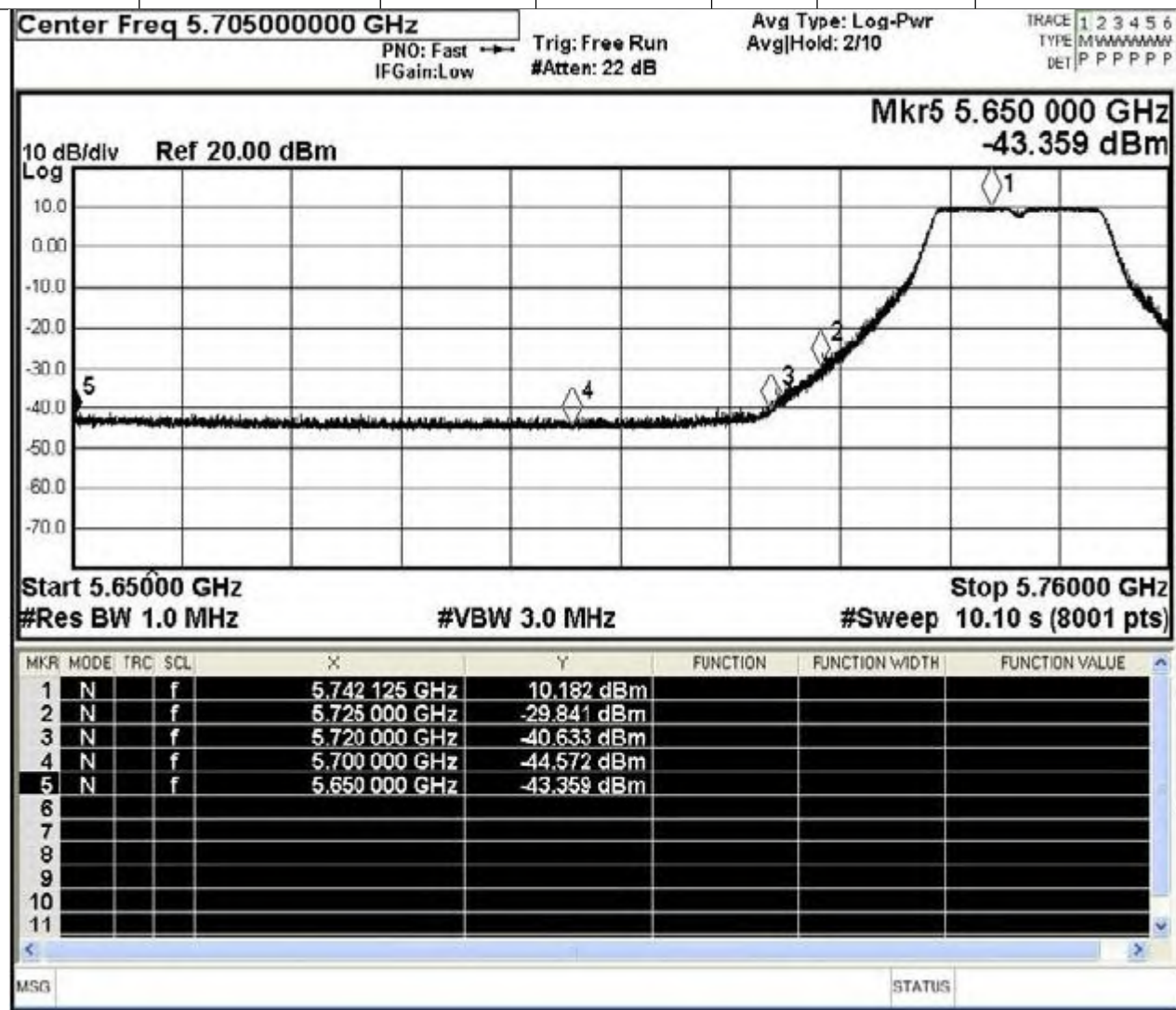
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5460	-44.256	3	-41.256	-27	-14.256	PASS
5350	-45.099	3	-42.099	-27	-15.099	





Antenna A 802.11ac20 Channel 149 5745MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5650	-43.359	3	-40.359	-27	-13.359	PASS
5700	-44.572	3	-41.572	10	-51.572	
5720	-40.633	3	-37.633	15.6	-53.233	
5725	-29.841	3	-26.841	27	-53.841	

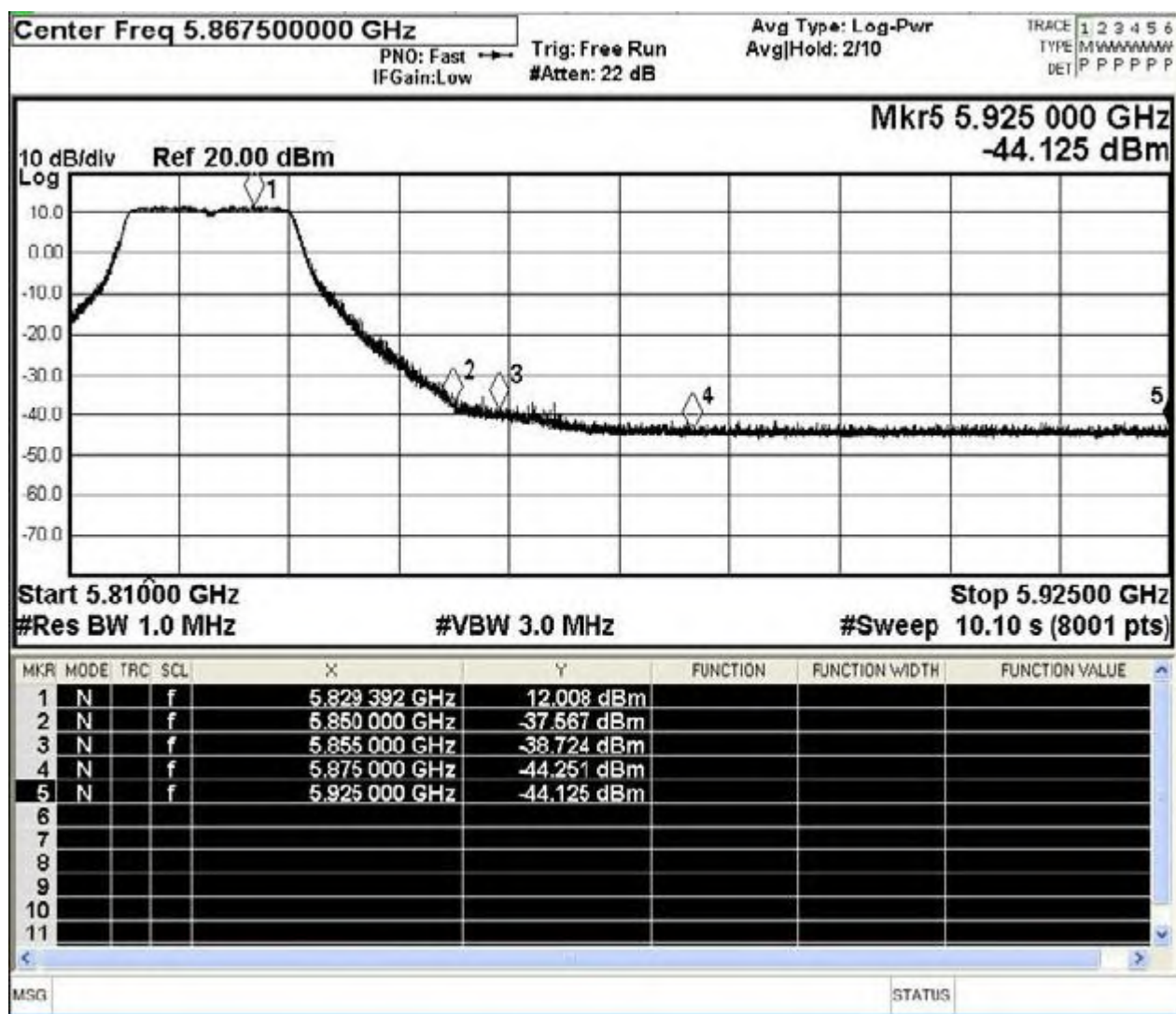




Report No.: PTC22021806201E-FC03

Antenna A 802.11ac20 Channel 165 5825MHz

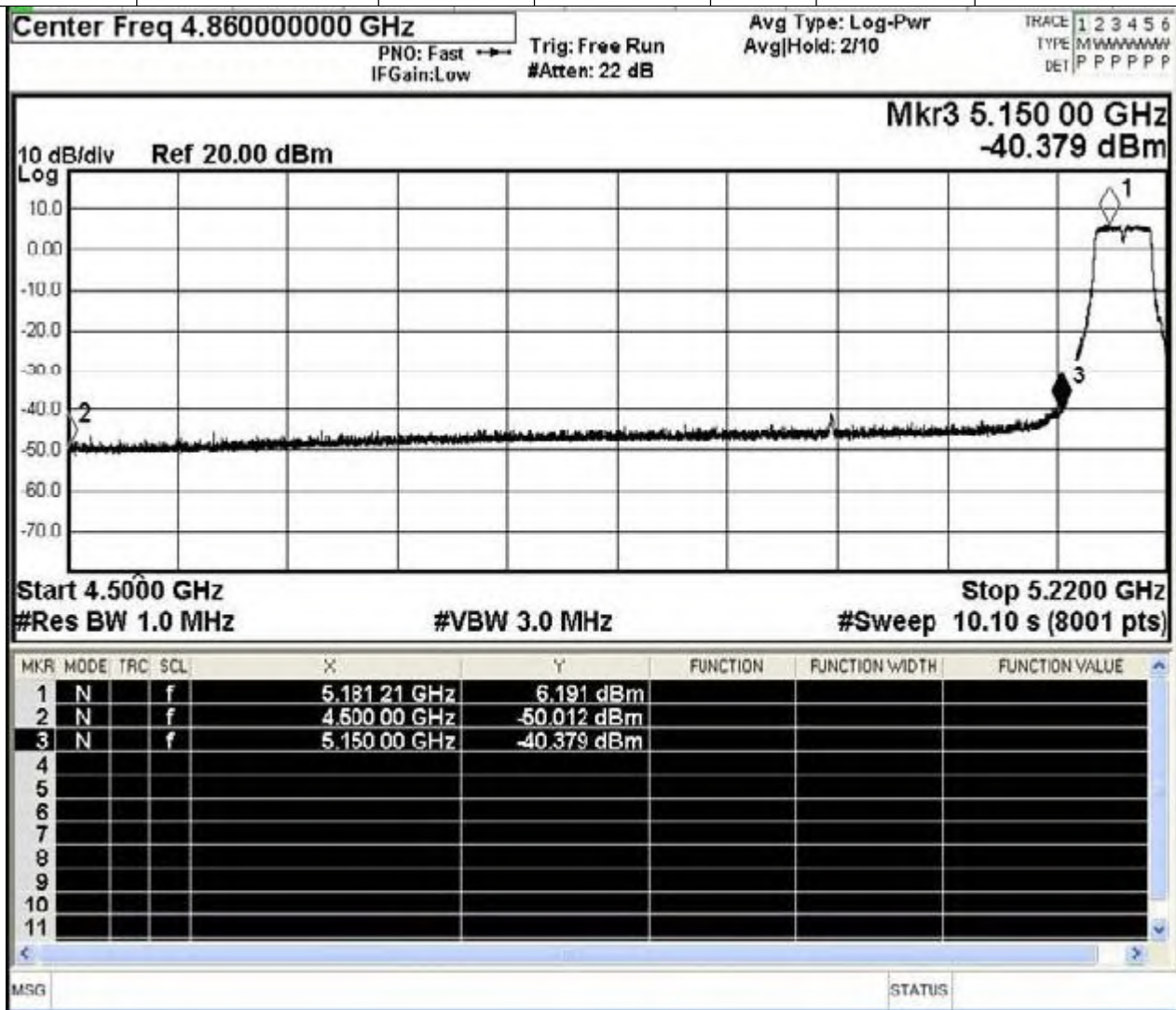
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5850	-37.567	3	-34.567	27	-61.567	PASS
5855	-38.724	3	-35.724	15.6	-51.324	
5875	-44.251	3	-41.251	10	-51.251	
5925	-44.125	3	-41.125	-27	-14.125	





Antenna A 802.11n40 Channel 38 5190MHz

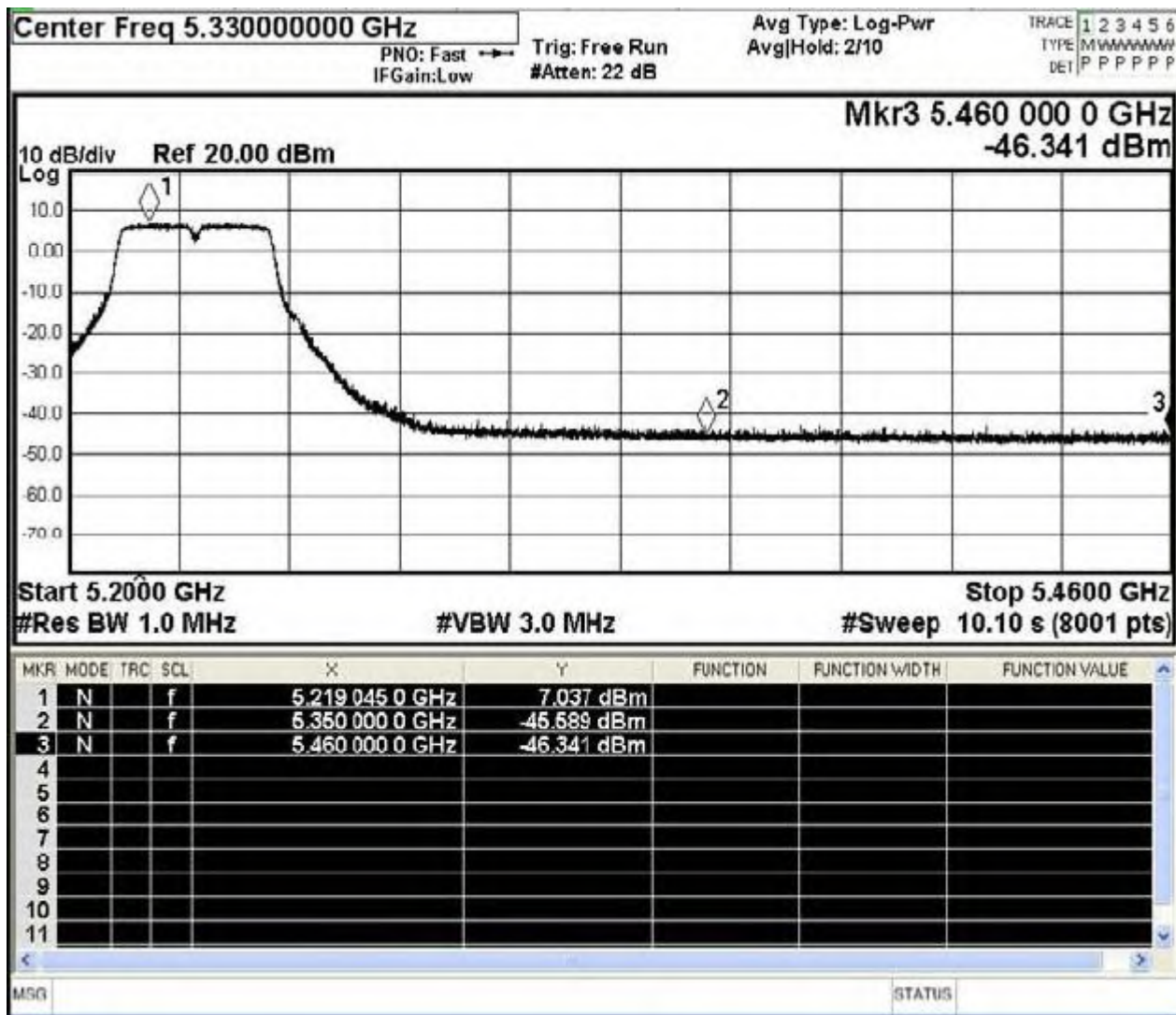
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
4500	-50.012	3	-47.012	-27	-20.012	PASS
5150	-40.379	3	-37.379	-27	-10.379	





Antenna A 802.11n40 Channel 46 5230MHz

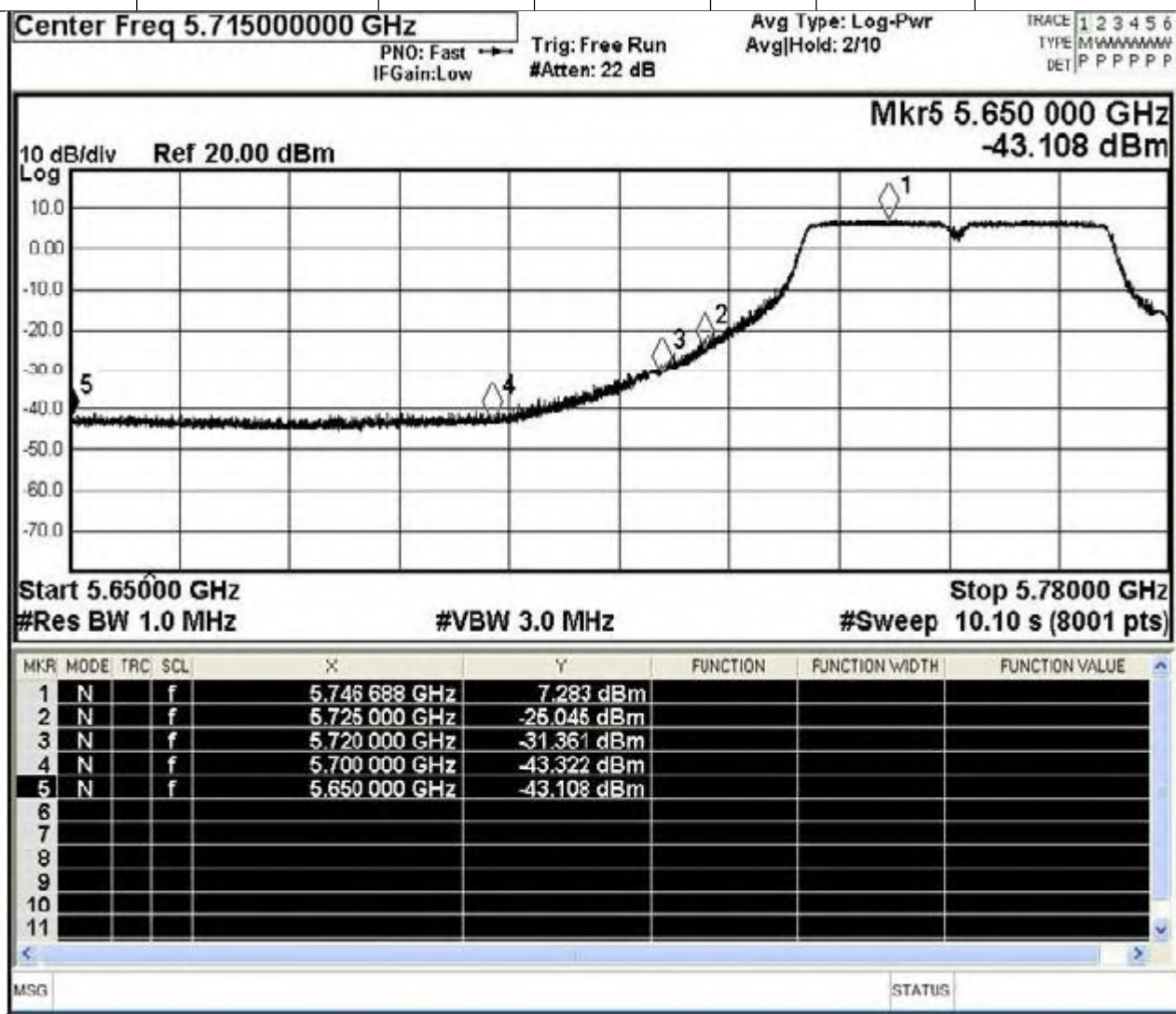
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5460	-46.341	3	-43.341	-27	-16.341	PASS
5350	-45.589	3	-42.589	-27	-15.589	





Antenna A 802.11n40 Channel 151 5755MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5650	-43.082	3	-40.082	27	-67.082	PASS
5700	-43.322	3	-40.322	15.6	-55.922	
5720	-31.361	3	-28.361	10	-38.361	
5725	-25.045	3	-22.045	-27	4.955	

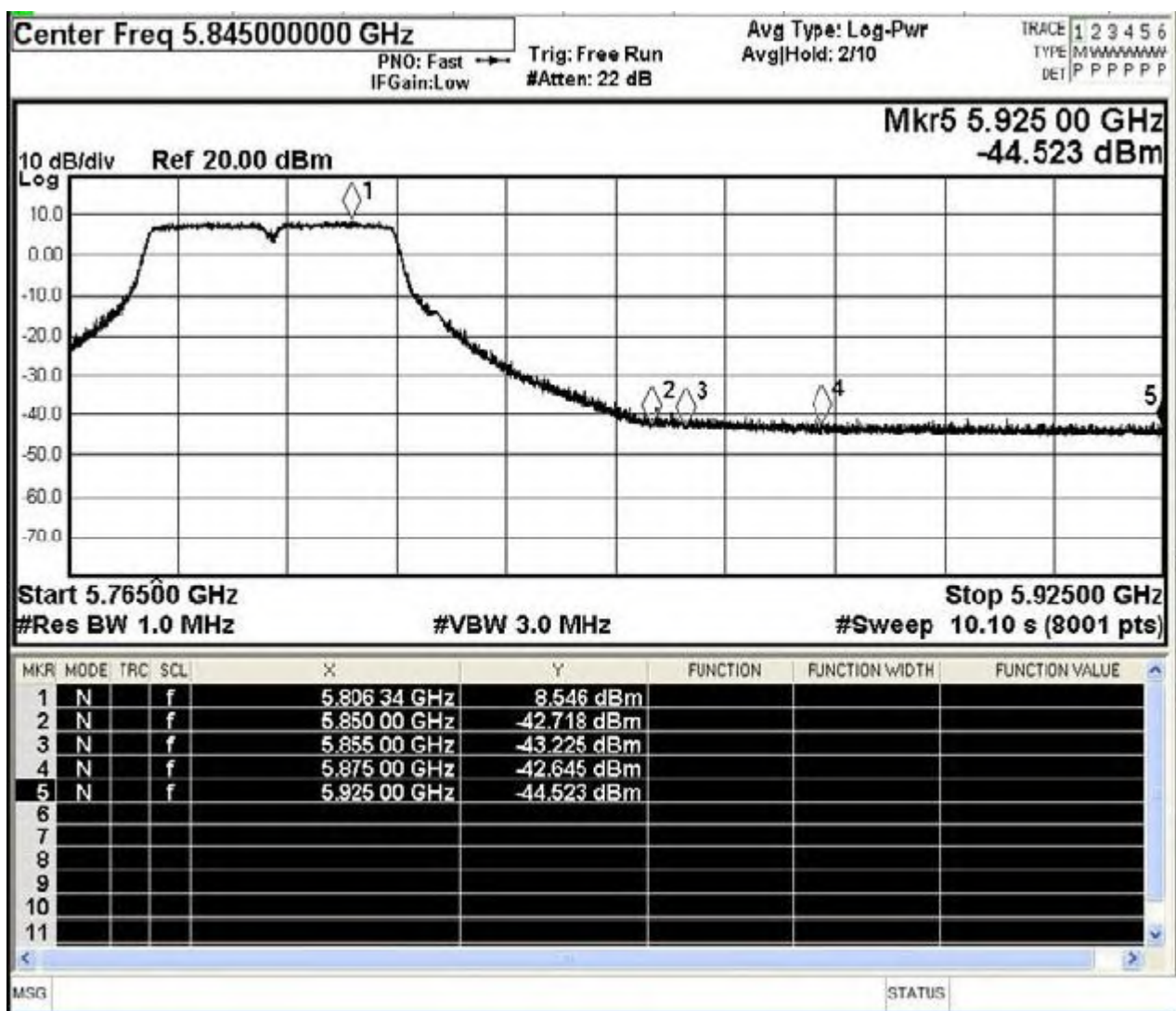




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Antenna A 802.11n40 Channel 159 5795MHz

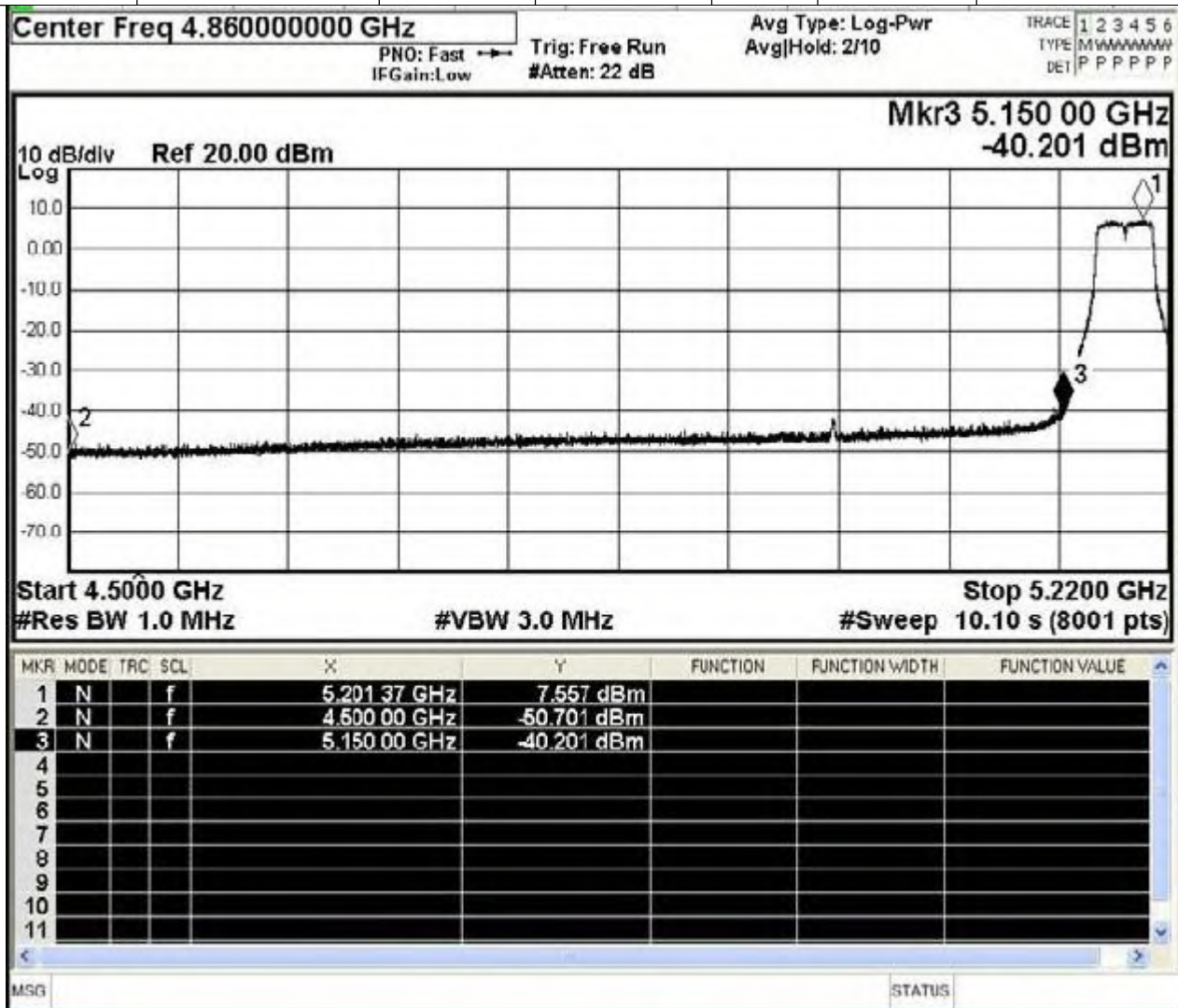
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5850	-42.718	2.64	-37	27	-64	PASS
5855	-43.225	2.64	-37.311	15.6	-52.911	
5875	-42.645	2.64	-41.476	10	-51.476	
5925	-44.523	2.64	-41.43	-27	-14.43	





Antenna A 802.11ac40 Channel 38 5190MHz

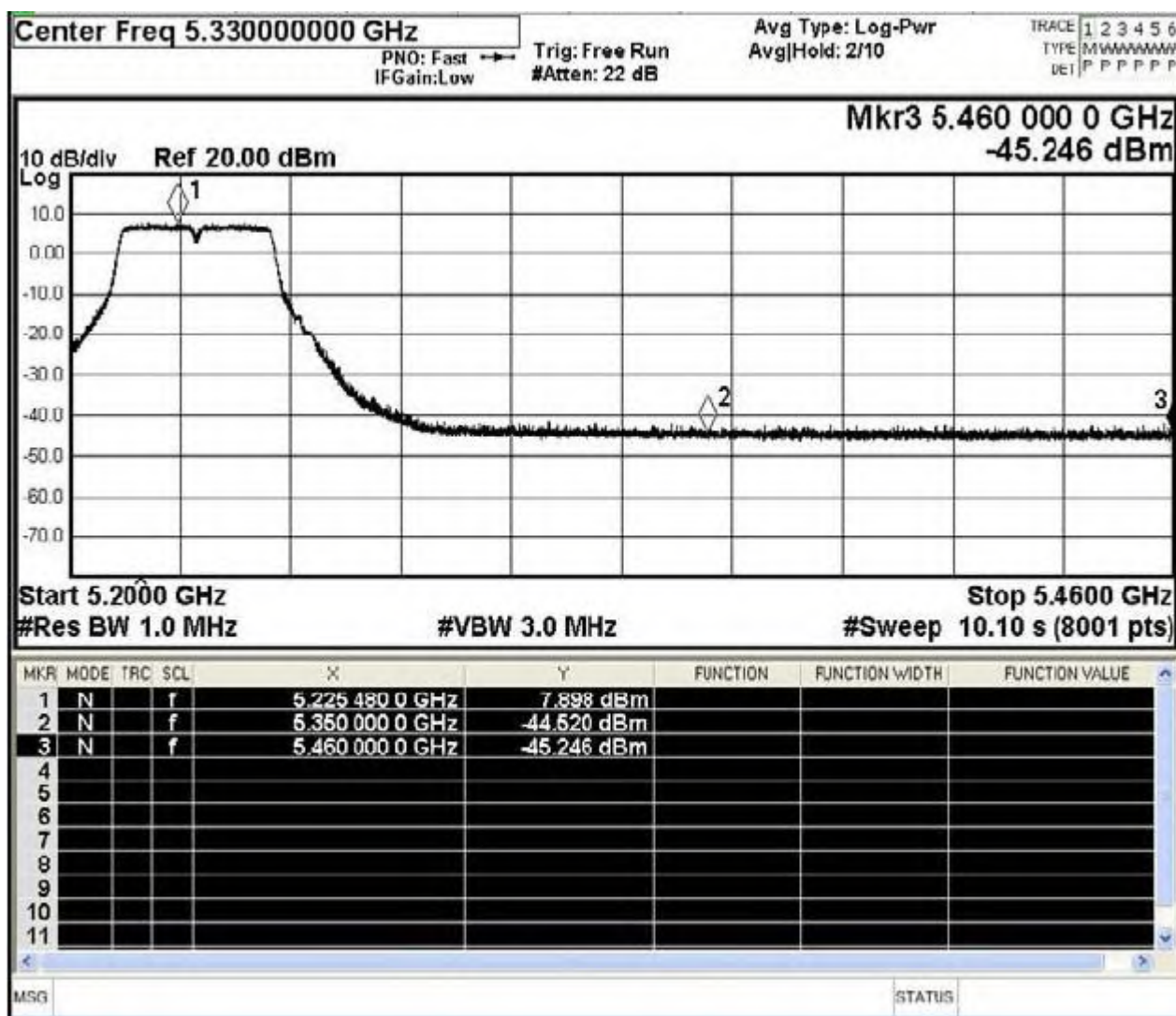
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
4500	-50.701	3	-47.701	-27	-20.701	PASS
5150	-40.201	3	-37.201	-27	-10.201	





Antenna A 802.11ac40 Channel 46 5230MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5460	-45.246	3	-42.246	-27	-15.246	PASS
5350	-44.52	3	-41.52	-27	-14.52	

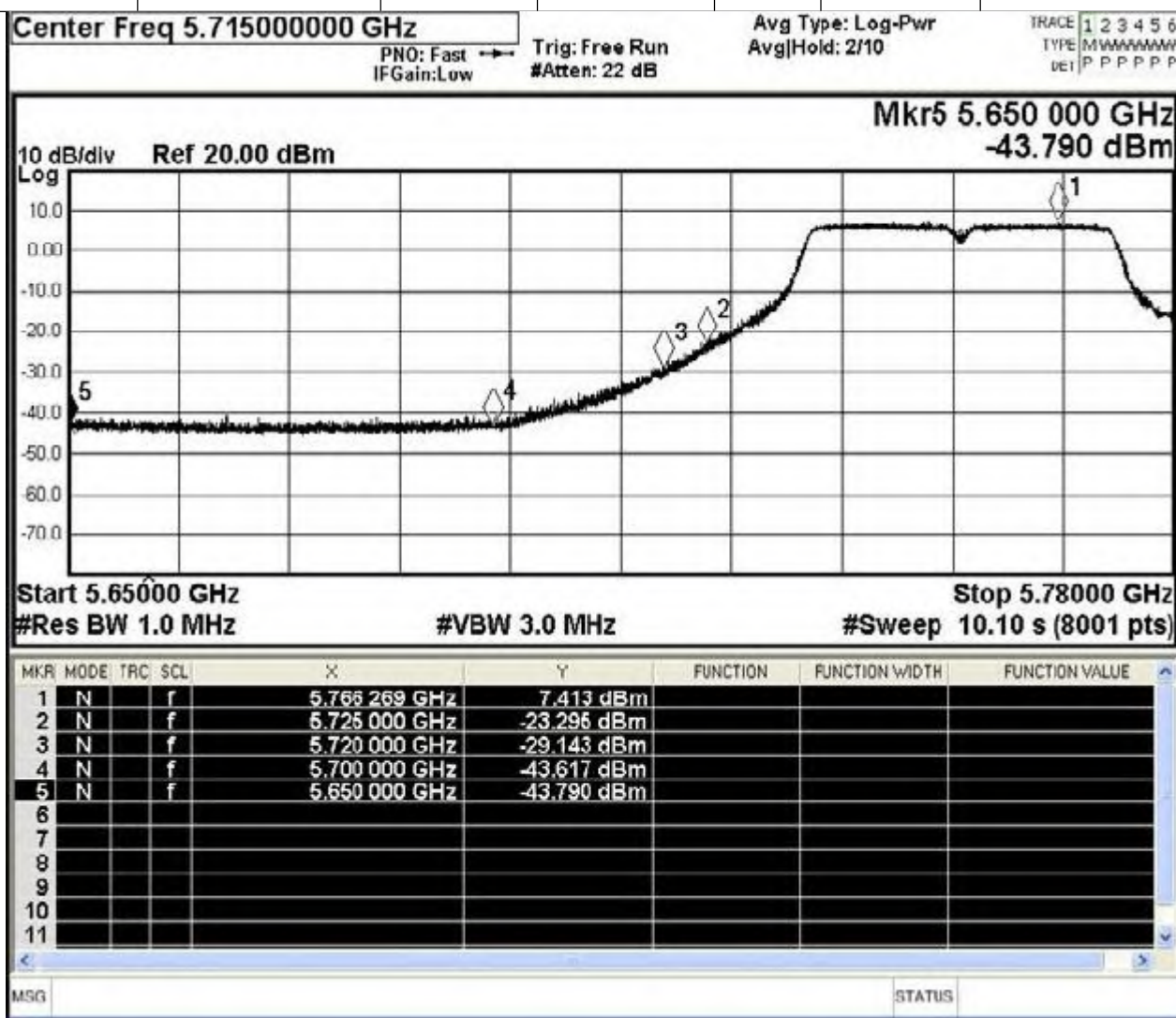




Report No.: PTC22021806201E-FC03

Antenna A 802.11ac40 Channel 151 5755MHz

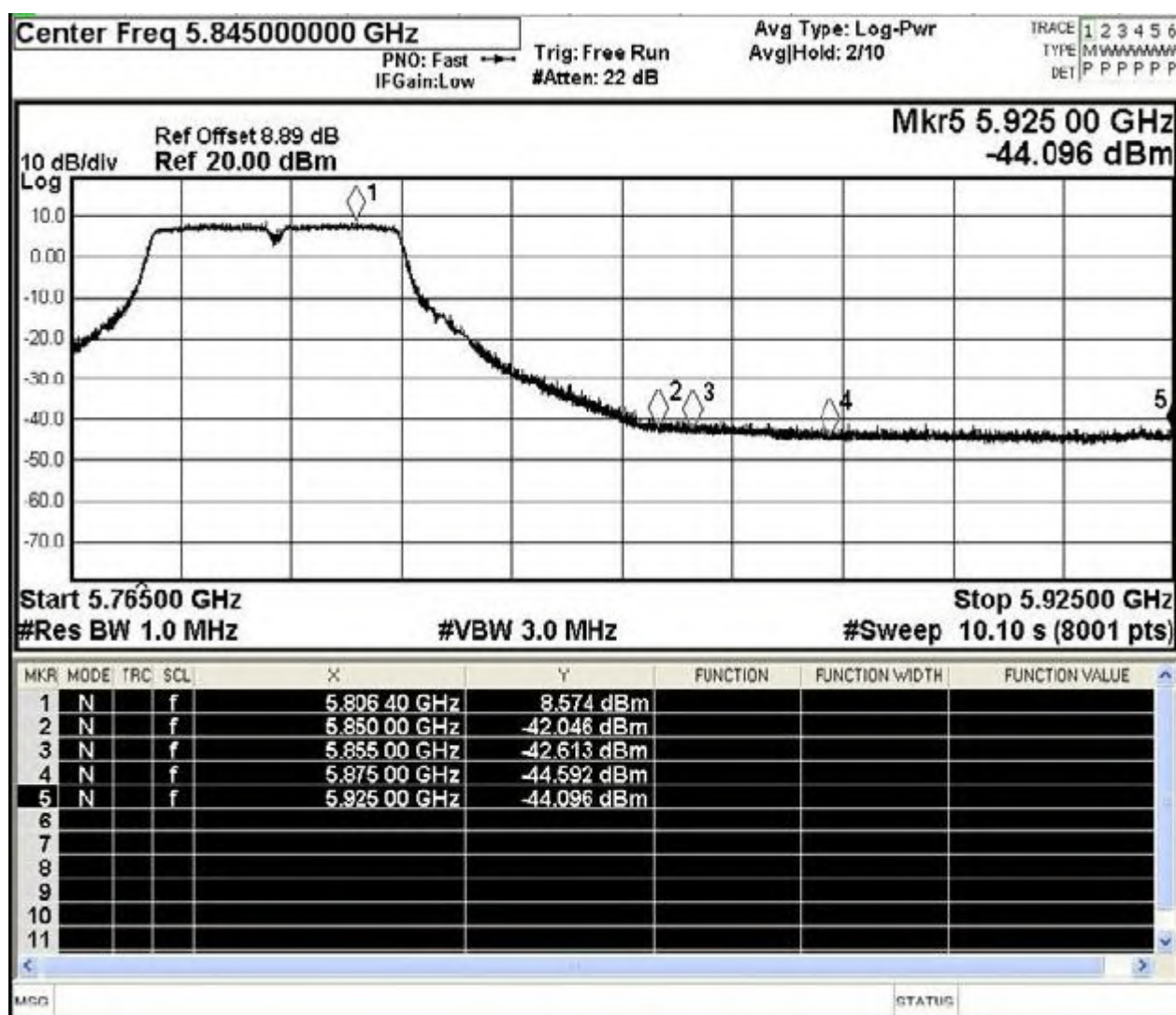
Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5650	-43.79	3	-40.79	-27	-13.79	PASS
5700	-43.617	3	-40.617	10	-50.617	
5720	-29.143	3	-26.143	15.6	-41.743	
5725	-23.296	3	-20.296	27	-47.296	





Antenna A 802.11ac40 Channel 159 5795MHz

Frequency (MHz)	Conducted Power(dBm)	Antenna Gain(dBi)	Covert Conducted Power(dBm)	Limit (dBm)	Over (dB)	Test Result
5850	-42.046	3	-39.046	27	-66.046	PASS
5855	-42.613	3	-39.613	15.6	-55.213	
5875	-44.592	3	-41.592	10	-51.592	
5925	-44.096	3	-41.096	-27	-14.096	





7 Emission Bandwidth and Occupied Bandwidth

Test Requirement	: FCC CFR47 Part 15 Section 15.407(a)(e)
Test Method	: ANSI C63.10:2013
Test Limit	According to FCC §15.407(a), The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth. As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

7.1 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01,
Emission Bandwidth (EBW)

a) Set RBW = approximately 1% of the emission bandwidth; b) Set the VBW > RBW; c) Detector = Peak; d) Trace mode = max hold; e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%; 99% Occupied Bandwidth

The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99% occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set $VBW \geq 3 \cdot RBW$
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency.